List of Publications

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Google Scholar	https://scholar.google.co.jp/citations?user=zxwrmYQAAAAJ
SPIRES	http://inspirehep.net/search?ln=ja&p=find+a+shinkai\%2C+h
arXiv	https://arxiv.org/find/gr-qc/1/au:+Shinkai_H/0/1/0/all/0/1
CiNii	http://ci.nii.ac.jp/openurl/query?rft.au= 真貝寿明

1 Research Activities

1.1 Articles in Refereed Journals

1. Bistability in an Ising model with non-Hamiltonian dynamics
   with J.R.Heringa, H.W.J.Blöte, A.Hoogland and R.K.P.Zia
   Physical Review **B 45** (1992) 5707-5709

2. Can gravitational waves prevent inflation?
   with K. Maeda
   Physical Review **D 48** (1993) 3910-3913

3. Generality of inflation in a planar universe
   with K. Maeda
   Physical Review **D 49** (1994) 6367-6378

4. A '3+1' method for finding principal null directions
   with L. Gunnarsen and K. Maeda
   Class. Quant. Grav. **12** (1995) 133-140

5. Dynamics of topological defects and inflation
   with N. Sakai, T. Tachizawa and K. Maeda
   Physical Review **D 53** (1996) 655-661

6. Constraints and reality conditions in the Ashtekar formulation of general relativity
   with G.Yoneda
   Class. Quant. Grav. **13** (1996) 783-790

7. Gravitational waves in Brans-Dicke theory : Analysis by test particles around a Kerr black hole
   with M. Saijo and K. Maeda
   Physical Review **D 56** (1997) 785-797

8. Tric for passing degenerate metrics in the Ashtekar formulation
   with G. Yoneda and A. Nakamichi
   Physical Review **D 56** (1997) 2086-2093

9. Generation of scalar-tensor gravity effects in equilibrium state boson stars
   with G.L. Comer
   Class. Quant. Grav. **15** (1998) 669-688

10. Dynamical evolution of boson stars in Brans-Dicke theory
    with J. Balakrishna
    Physical Review **D 58** (1998) 044016 (13 pages)

11. Symmetric hyperbolic system in the Ashtekar formulation
    with G. Yoneda
    Physical Review Letters **82** (1999) 263-266

12. Truncated post-Newtonian neutron star model
    Physical Review **D 60** (1999) 067504 (4 pages)

13. Asymptotically constrained and real-valued system based on Ashtekar's variables
with G. Yoneda
Physical Review **D 60** (1999) 101502 (Rapid Communication, 5 pages)

14. Constructing hyperbolic systems in the Ashtekar formulation of general relativity
with G. Yoneda
Int. J. Mod. Phys. **D 9** (2000) 13-34

15. Fate of the Kaluza-Klein bubbles
with T. Shiromizu
Physical Review **D 62** (2000) 024010 (8 pages)

16. Hyperbolic formulations and numerical relativity: experiments using Ashtekar's connection variables
with G. Yoneda
Class. Quant. Grav. **17** (2000) 4799-4822

17. Hyperbolic formulations and numerical relativity II: Asymptotically constrained systems of Einstein equations
with G. Yoneda
Class. Quant. Grav. **18** (2001) 441-462

18. Charged brane world black holes
with A. Chamblin, H. S. Reall and T. Shiromizu
Physical Review **D 63** (2001) 064015 (11 pages)

19. Constraint propagation in the family of ADM systems
with G. Yoneda,
Physical Review **D 63** (2001) 124019 (9 pages)

20. Quasi-spherical approximation for rotating black holes
with S.A. Hayward
Physical Review **D 64** (2001) 044002 (8 pages)

21. Adusted ADM systems and their expected stability properties: constraint propagation analysis in Schwarzschild spacetime
with G. Yoneda
Class. Quant. Grav. **19** (2002) 1027-1049

22. Fate of the first traversible wormhole: black-hole collapse or inflationary expansion
with S.A. Hayward
Physical Review D **66** (2002) 044005 (9 pages)

23. Advantages of modified ADM formulation: constraint propagation analysis of Baumgarte-Shapiro-Shibata-Nakamura system
with G. Yoneda
Physical Review D **66** (2002) 124003 (10 pages)

24. Diagonalizability of constraint propagation matrix
with G. Yoneda
Class. Quant. Grav. **20** (2003) L31-36 (Letter)

25. Toward standard testbeds for numerical relativity
with M. Alcubierre, G. Allen, C. Bona, D. Fiske, T. Goodale, F.S. Guzman, I. Hawke, S. Hawley, S. Husa, M. Koppitz, C. Lechner, D. Pollney, D. Rideout, E. Schnetter, E. Seidel, D. Shoemaker, B. Szilagyi, R. Takahashi, and J. Winicour (Mexico Numerical Relativity Workshop 2002 Participants),
Class. Quant. Grav. **21** (2004) 589-613.

26. Constraint propagation in $(N+1)$-dimensional space-time
with G. Yoneda
Gen. Rel. Grav. **36** (2004) 1931-1937

27. Gravitational waves from merging intermediate-mass black holes
with T. Matsubayashi and T. Ebisuzaki
Astrophys. J. **614** (2004) 864-868

28. Observation results by the TAMA300 detector on gravitational wave bursts from stellar-core collapses
with the TAMA collaboration
Physical Review D **71** (2005) 082002 (17 pages)

29. Upper limits from the LIGO and TAMA detectors on the rate of gravitational-wave bursts
with LIGO Scientific Collaboration, TAMA Collaboration
Physical Review D **72** (2005) 122004 (16 pages)

30. Joint LIGO and TAMA300 Search for Gravitational Waves from Inspiralling Neutron Star Binaries
with LIGO Scientific Collaboration, TAMA Collaboration
Physical Review D **73** (2006) 102002 (10 pages)

31. Results of the search for inspiraling compact star binaries from TAMA300's observation in 2000-2004
with TAMA Collaboration
Physical Review D **74** (2006) 122002 (8 pages)

32. Numerical Experiments of adjusted BSSN systems for controlling constraint violations
with K. Kiuchi
Physical Review D **77** (2008) 044010 (11 pages)

33. $N+1$ formalism in Einstein-Gauss-Bonnet gravity
with T. Torii
Physical Review D **78** (2008) 084037 (13 pages)

34. Formulations of the Einstein equations for numerical simulations
Journal of Korean Physical Society, 54 (2009) 2513-2528, available as arXiv:0805.0068

35. Black Objects and Hoop Conjecture in Five-dimensional Space-time
with Y. Yamada
Class. Quantum Grav. 27 (2010) 045012 (15 pages)

36. Formation of naked singularities in five-dimensional space-time
with Y. Yamada
Physical Review D **83** (2011) 064006 (5 pages)

37. Constraint propagation of C^2-adjusted formulation – Another recipe for robust ADM evolution system –
with T. Tsuchiya and G. Yoneda
Physical Review D **83** (2011) 064032 (10 pages)

38. Constraint propagation of C^2-adjusted formulation II – Another recipe for robust BSSN evolution system –
with T. Tsuchiya and G. Yoneda
Physical Review D **85** (2012) 044018 (12 pages)

39. Numerical Investigations of Five-dimensional Gravitational Collapses
with Y. Yamada
Int. J. Mod. Phys. Conf. Ser. 7 (2012) 148-157

40. Wormholes in higher dimensional space-time: Exact solutions and their linear stability analysis
with T. Torii
Physical Review D **88** (2013) 064027 (6 pages)

41. Gravitational waves from merging intermediate-mass black holes : II Event rates at ground-based detectors
with N. Kanda and T. Ebisuzaki
Astrophys. J. **835** (2017) 276 (8 pages)

1.2 Review Articles

1. Re-formulating the Einstein equations for stable numerical simulations: Formulation Problem in Numerical Relativity
with G. Yoneda
For a part of the book *Recent Progress in Astronomy and Astrophysics* (Nova Science Publ., New York, 2004), available as gr-qc/0209111

2. Formulation Problem in Numerical Relativity (in Japanese)
with G. Yoneda
Ouyou Suuri (Journal of the Japan Society for Industrial and Applied Mathematics), **15** (March 2005), 2-15.

3. Formulations of the Einstein equations for numerical simulations
Journal of Korean Physical Society, 54 (2009) 2513-2528, available as arXiv:0805.0068

1.3 Invited Lectureships

1. Introduction to Numerical Relativity
Four-hour invited lecture at Asia-Pacific Center for Theoretical Physics *Winter School on Gravitation and Cosmology* (Ewha Womans University, Seoul, Korea, January, 2003)
Lecture note is available at `http://www.oit.ac.jp/is/~shinkai/lecture/winterAPCTP/`

2. Formulation Problem in Numerical Relativity
Two-hour invited lecture at Asia-Pacific Center for Theoretical Physics (APCTP) *Winter School on Black Hole Astrophysics 2008* (Korea Astronomy & Space Science Institute (KASI), Daejeon, Korea, January, 2008)
Lecture note is available at `http://www.oit.ac.jp/is//~shinkai/lecture/winterAPCTP/`

3. Numerical Approaches in General Relativity
   Two-days invited lecture at Kinki University, Osaka, Japan
   Lecture note is available at
   `http://www.is.oit.ac.jp/is/~shinkai/lecture/seminar2011\_KinkiU`

1.4 Plenary/Invited talks at International Conferences

1. Post-Newtonian neutron star binary initial data for numerical relativity
   H. Shinkai
   Initial data for black hole binary, Inivited talk [Berlin, June 1999]

2. Re-formulate the Einstein equations for stable numerical simulations
   H. Shinkai (invited talk)
   The 12th Workshop on General Relativity and Gravitation, [Tokyo Univ., Nov. 2002] (Proceedings, p137-151)

3. Controlling constraints in general relativity
   H. Shinkai (invited talk at Minisymposia, "Numerical Methods for PDEs with Cosntraints")
   The 5th International Congress on Industrial and Applied Mathematics [Sydney, Australia, July 2003]

4. Wormhole dynamics
   The workshop on theories and possibilities of observations of wormholes [Rikkyo U., October 2012]

1.5 Presentations at International Conferences / Workshops

1. Gravitational waves in expanding Universes with cosmological constant
   H. Shinkai and K. Maeda
   The Waseda Symposium on *Quantum Physics and the Universe*, (Pergamon Press Ltd, 1993, Vistas in Astronomy, 37, p.449)

2. Cosmic no hair conjecture in a planar universe
   H. Shinkai and K. Maeda
   The Yamada Conference on *Evolution of the Universe and its Observational Quest*, (Universal Academy Press, 1994, The Proceedings ed. by K.Sato, p.533)

3. Inflation in a planar universe
   H. Shinkai and K. Maeda
   The 7th Marcel Grossmann Meeting on *General Relativity* [Stanford Univ., August 1994] (World Scientific, 1997, should be published)

4. Numerical relativity using Ashtekar formulation
   H. Shinkai and G. Yoneda
   The 14th International Conference on General Relativity and Gravitation [Florence, August 1995]

5. Dynamics of topological defects near the Planck scale
   N. Sakai, H. Shinkai, T. Tachizawa and K. Maeda
   The 14th International Conference on General Relativity and Gravitation [Florence, August 1995]

6. Weyl scalar Ψ_i in 3+1 numerical spacetime
   H. Shinkai
   The 7th Gregynog Workshop on Numerical Relativity, [Gregynog, August 1995]

7. Dynamics in the Ashtekar gravity
   H. Shinkai and G. Yoneda
   The 18th Texas Symposium on Relativistic Astrophysics, [Chicago, December 1996]

8. On reality conditions for Ashtekar variables and a trick of passing a degenerate point
   A. Nakamichi, G. Yoneda and H. Shinkai
   The 18th Texas Symposium on Relativistic Astrophysics, [Chicago, December 1996]

9. Can we detect Brans-Dicke scalar gravitational waves in gravitational collapse?
   H. Shinkai, M. Saijo and K. Maeda
   The 18th Texas Symposium on Relativistic Astrophysics, [Chicago, December 1996] (World Scientific, 1998, p619)

10. Lorentzian dynamics in Ashtekar gravity
    H. Shinkai and G. Yoneda
    The 8th Marcel Grossmann Meeting, [Jerusalem, June 1997] (ed. by Tsvi Piran, World Scientific, 1999, p774), gr-qc/9710074

11. Newtonian and post-Newtonian binary neutron star mergers
    H. Shinkai, W-M. Suen, F.D. Swesty, M. Tobias, E.Y.M. Wang, and C. Will
    The 8th Marcel Grossmann Meeting, [Jerusalem, June 1997] (ed. by Tsvi Piran, World Scientific, 1999, p771), gr-qc/9710073

12. Dynamical evolution of boson stars
    H. Shinkai, J. Balakrishna, G.L. Comer, E. Seidel and W-M. Suen
    The Numerical Astrophysics 98 [Tokyo, March 1998] (Kluwer Academic, 1999, p289)

13. Hyperbolic systems in the Ashtekar formulation – asymptotically stable and real-valued system as its application
    H. Shinkai and G. Yoneda
    Physics of strong gravitational fields, poster [UCSB, June 1999]

14. Post-Newtonian initial data approach for neutron star binary problem
    H. Shinkai, W-M. Suen and C.M. Will
    YKIS99 Black Holes and Gravitatational Waves, poster [Kyoto, June 1999]

15. Hyperbolic formulations and numerical relativity
    H. Shinkai and G. Yoneda
    The 9th Marcel Grossmann Meeting, [Rome, July 2000] (Proceedings, p 1717-1718 (eds by V.G. Gurzadyan, R.T. Jantzen, R. Ruffini, World Scientific, 2003))

16. Will hyperbolic formulations help numerical relativity?
    H. Shinkai and G. Yoneda
    The 10th Workshop on General Relativity and Gravitation, [Osaka, September 2000] (Proceedings, p.80-86)

17. Quasi-spherical approximation for rotating black holes
    H. Shinkai and S. Hayward

Workshop on Astrophysical Sources for Ground-Based Gravitational Wave Detectors, poster [Drexel Univ. Philadelphia, 2000 October]

18. Quasi-spherical approximation for rotating black holes
H. Shinkai and S.A. Hayward
The 16th International Conference on General Relativity and Gravitation [South Africa, July 2001]

19. Cosnstraint propagation in the family of ADM systems
H. Shinkai and G. Yoneda
The 16th International Conference on General Relativity and Gravitation [South Africa, July 2001]

20. Adjusted Systems – adding constraints in RHS
H. Shinkai
Workshop on Numerical Relativity 2002 [South Africa, July 2001]

21. Adjusted ADM systems and their expected stability properties
H. Shinkai and G. Yoneda
The 11th Workshop on General Relativity and Gravitation, [Waseda Univ., January 2002] (Proceedings, p223-227)

22. Systematic understanding of asymptotical stability via constraint propagation analysis — Proposals of Adjusted ADM Systems and Adjusted BSSN Systems —
H. Shinkai (60 min talk)
Formulations of Einstein Equations for Numerical Relativity [Mexico City, May 2002]

23. Re-formulations of Einstein equations for stable numerical simulations
H. Shinkai (15 min talk)
International Conference on Theoretical Physics [Paris, UNESCO July 2002]

24. Controlling constraints in free evolution systems
H. Shinkai (30 min talk)
Gravitation: A Decennial Perspective, [Penn State Univ., June 2003]

25. Gravitational Waves from merging intermmediate-mass black-holes
H. Shinkai, T. Matsubayashi and T. Ebisuzaki (poster)
Stellar-Mass, Intermediate-Mass, and Supermassive Black Holes, [Kyoto, October 2003]

26. Constraint propagation analysis and adjusted systems
H. Shinkai and G. Yoneda
Numerical Relativity: Formulation Problem II, [Mexico, December 2003]

27. Formulation Problem of Numerical Relativity
G. Yoneda and H. Shinkai
Tenth International Conference on Hyperbolic Problems [Osaka, September 2004]

28. Constraint propagation revisited (poster)
H. Shinkai and G. Yoneda
The 16th Workshop on General Relativity and Gravitation, [Niigata, November 2006]

29. Controlling constraint violation using adjusted ADM systems (poster)
H. Shinkai and G. Yoneda
The 18th International Conference on General Relativity and Gravitation, [Sydney, July 2007]

30. Controlling constraint violations in numerical relativity (poster)
H. Shinkai and G. Yoneda
The 8th Asia-Pacific International Conference on Gravitation and Astrophysics, [Nara, Japan, August 2007]

31. Application of adjusted BSSN systems to Apples-with-Apples tests (poster)
K. Kiuchi and H. Shinkai
The 8th Asia-Pacific International Conference on Gravitation and Astrophysics, [Nara, Japan, August 2007]

32. Application of adjusted BSSN systems to Apples-with-Apples tests (poster)
K. Kiuchi and H. Shinkai
The 8th Asia-Pacific International Conference on Gravitation and Astrophysics, [Nara, Japan, August 2007]

33. N+1 formalism in Einstein-Gauss-Bonnet gravity (poster)
H. Shinkai and T. Torii
The 17th Workshop on General Relativity and Gravitation (JGRG17), [Nagoya, Japan, December 2007]

34. Towards the dynamics in Einstein-Gauss-Bonnet gravity: Initial Value Problem (poster)
H. Shinkai and T. Torii
The 18th Workshop on General Relativity and Gravitation (JGRG18) , [Hiroshima, Japan, December 2008]

35. Apparent Horizon Formation in Five-dimensional Spacetime (poster)
Y. Yamada and H. Shinkai
The 18th Workshop on General Relativity and Gravitation (JGRG18) , [Hiroshima, Japan, December 2008]

36. Constraint Propagation of C^2-adjusted Equations – Another Recipe for Robust Evolution Systems –(poster)
T. Tsuchiya, G. Yoneda and H. Shinkai
The 19th Workshop on General Relativity and Gravitation (JGRG19) , [Tokyo, Japan, December 2009]

37. Black Objects and Hoop Conjectue in Five-dimensional Space-time (poster)
Y. Yamada and H. Shinkai
The 19th Workshop on General Relativity and Gravitation (JGRG19) , [Tokyo, Japan, December 2009]

38. Black Objects and Hoop Conjectue in Five-dimensional Space-time
H. Shinkai and Y. Yamada
The 19th International Conference on General Relativity and Gravitation, [Mexico City, Mexico, July 2010]

39. Constraint Propagation of C^2-adjusted Equations — Another Recipe for Robust Evolution Systems — (poster)

H. Shinkai, T. Tsuchiya and Y. Yamada
The 19th International Conference on General Relativity and Gravitation, [Mexico City, Mexico, July 2010]

40. Gravitational Collapse in Five-dimensional Space-time (poster)
Y. Yamada and H. Shinkai
The 20th Workshop on General Relativity and Gravitation (JGRG20) , [Kyoto, Japan, September 2010]

41. Gravitational Collapse in Five-dimensional Space-time (poster)
Y. Yamada and H. Shinkai
The 2010 Cosmo/CosPA International Workshop (Cosmo/CosPA 2010) , [Tokyo, Japan, September 2010]

42. Gravitational Collapse in Five-dimensional Space-time (25min talk)
H. Shinkai
The 2011 Shanghai Asia-Pacific school on Gravitation, [Shanghai, China, February 2011]
Int. J. Mod. Phys. Conf. Ser. 7 (2012) pp. 148-157

43. Gravitational collapse of ring objects in five-dimensional space-time (poster)
Y. Yamada and H. Shinkai
The 21th Workshop on General Relativity and Gravitation (JGRG21) , [Tohoku U., Japan, September 2011]

44. Constraint propagation and constraint-damping in the C2-adjusted formulation
T. Tsuchiya, G. Yoneda and H. Shinkai
The 21th Workshop on General Relativity and Gravitation (JGRG21) , [Tohoku U., Japan, September 2011]

45. Numerical Study of 5-dimensional Gravitational Collapses
Y. Yamada and H. Shinkai
The 13th Marcel Grossmann Meeting, [Stockholm, Sweden, July 2012]

46. Wormhole dynamics in Gauss-Bonnet gravity (poster)
H. Shinkai and T. Torii
RESCEU Symposium on General Relativity and Gravitation (JGRG22) , [Tokyo U., Japan, November 2012]

47. Wormhole evolutions in higher-dimensional gravity –Effects of Gauss-Bonnet gravity terms (poster)
H. Shinkai and T. Torii
The 20th International Conference on General Relativity and Gravitation (GR20), [Warsaw, Poland, July 2013]

48. Gravitational collapse of ring objects in five-dimensional space-time (poster)
Y. Yamada and H. Shinkai
The 23th Workshop on General Relativity and Gravitation (JGRG23), [Hirosaki U., Japan, November 2013]

49. Wormhole dynamics in Gauss-Bonnet gravity (poster)
H. Shinkai and T. Torii

The 23th Workshop on General Relativity and Gravitation (JGRG23), [Hirosaki U., Japan, November 2013]

50. Wormhole dynamics
H. Shinkai and T. Torii
International Conference on Mathematical Modeling in Physical Sciences [Madrid, Spain, August 2014]. conference paper J. Phys.: Conf. Ser. 574 (2015) 012056.

51. Wormhole dynamics in higher-dimensional space-time
H. Shinkai and T. Torii
Spanish Relativity Meeting 2014 [Valencia, Spain, September 2014]. conference paper J. Phys.: Conf. Ser. 600 (2015) 012038.

52. Wormhole dynamics in higher-dimensional space-time (poster)
H. Shinkai and T. Torii
JGRG24: The 24rd Workshop on General Relativity and Gravitation in Japan [IMPU, Tokyo Univ., November 2014]

53. Dynamics in n-dimensional Gauss-Bonnet gravity: I. Colliding Scalar Waves, II. Wormhole evolutions (poster)
H. Shinkai and T. Torii
General Relativity and Gravitation: A Centennial Perspective[Penn State, USA, June 2015]

54. Can we distinguish formation models of a super-massive black-hole? (poster)
H. Shinkai, T. Ebisuzaki, and N. Kanda
Gravitational Wave Physics and Astronomy Workshop (GWPAW) 2015 [Osaka, Japan, June 2015]

55. Singularity formation in n-dimensional Gauss-Bonnet gravity (poster)
H. Shinkai and T. Torii
JGRG25: The 25th Workshop on General Relativity and Gravitation in Japan [YITP, Kyoto Univ., December 2015]

56. Formation Scenario of SMBH and Gravitational Wave
H. Shinkai, N. Kanda and T. Ebisuzaki
The First International Meeting on KAGRA [KAIST, Daejeon, Korea, June 2016]

57. Gravitational waves from merging intermediate-mass black-holes (poster)
H. Shinkai, N. Kanda and T. Ebisuzaki
JGRG26: The 26th Workshop on General Relativity and Gravitation in Japan [Osaka City Univ., October 2016]

58. Singularity Avoidance of Gauss-Bonnet gravity (poster)
T. Torii and H. Shinkai
JGRG26: The 26th Workshop on General Relativity and Gravitation in Japan [Osaka City Univ., October 2016]

1.6 Presentations at Domestic Workshops

1. Gravitational waves in a planar universe with cosmological constant
H. Shinkai and K. Maeda

The Workshop on General Relativity and Gravitation, [Tokyo Metropolitan University. December 1991]

2. Colliding plane gravitational waves (in Japanese)
   H. Shinkai and K. Maeda
   The 2nd Gravitational Wave Symposium, [Atami, Dec. 1991]

3. Finding principal null directions for numerical relativists
   H. Shinkai, L. Gunnersen and K. Maeda
   The 3rd Workshop on General Relativity and Gravitation, [Tokyo University, January 1994]

4. Numerical relativity using Ashtekar's variables
   H. Shinkai and G. Yoneda
   The 4th Workshop on General Relativity and Gravitation, [Kyoto University, November 1994]

5. Numerical study of topological inflationary scenario
   N. Sakai, H. Shinkai, T. Tachizawa and K. Maeda
   The 4th Workshop on General Relativity and Gravitation, [Kyoto University, November 1994]

6. Gravitational Faraday effect in colliding plane waves (in Japanese)
   H. Shinkai
   The 7th Rironkon Simposium, [Tokyo National Observatory, December 1994]

7. Dynamics in the Ashtekar gravity
   H. Shinkai, G. Yoneda and A. Nakamichi
   The 5th Workshop on General Relativity and Gravitation, [Nagoya University, January 1996] (Proceedings, p.121-130)

8. A trick for passing degenerate points in the Ashtekar formulation
   A. Nakamichi, G. Yoneda and H. Shinkai
   The 6th Workshop on General Relativity and Gravitation, [Tokyo Institute of Technology, December 1996] (Proceedings, p.430-437)

9. Towards a numerical evolution using post-Newtonian initial data
   H. Shinkai
   The 2nd Neutron Star Grand Challenge Meeting, [Washington University, May 1997] (Proceedings, 9 pages)

10. Boson Stars in Scalar-Tensor theories
    H. Shinkai, G.L. Comer and J. Balakrishna
    The 7th Midwest Relativity Conference, [Washington University, November 1997] (Proceedings, p.28-32)

11. Constructing hyperbolic systems in the Ashtekar formulation
    G. Yoneda and H. Shinkai
    The 8th Workshop on General Relativity and Gravitation, [Niigata University, October 1998]

12. Symmetric hyperbolic and asymptotically constrained system based on Ashtekar's variable
    G. Yoneda and H. Shinkai
    The 9th Workshop on General Relativity and Gravitation, [Hiroshima University, November 1999] (Proceedings, p342-349)

13. Hyperbolic formulations of Ashtekar's new connection formulations and these numerical experiments
    H. Shinkai and G. Yoneda
    The 4th Eastern Gravity meeting, [Duquesne University, Pittsburgh, April 2000]

14. Asymptotically constrained systems for Numerical Relativity
    H. Shinkai
    The 14th Rironkon Simposium, [Osaka, December 2001] (Proceedings p.93))

15. Stability of Wormholes
    H. Shinkai
    Workshop on Spacetime singularity and its around, [Osaka, January 2002]

16. Numerical Relativity: Formulation Problems
    H. Shinkai
    Workshop on Gravitational Wave Researches, [Kyoto, February 2002]

17. Numerical Experiments of Adjusted Einstein equations
    H. Shinkai
    The 15th Rironkon Simposium, [NAOJ, Tokyo, December 2002] (Proceedings to be published)

18. Cactus as a Problem Solving Emvironment
    H. Shinkai (invited talk)
    Grid-Computing Workshop, [Fujitsu, Tokyo, January 2003]

19. Numerical experiments of the adjusted Einstein equations
    H. Shinkai
    Gravitational Waves and its around, [YITP, January 2003]

20. Gravitational waves from merging intermediate-mass black holes
    H. Shinkai, T. Matsubayashi, and T. Ebisuzaki
    The 2nd DECIGO workshop, [NAO, May 2003]

21. Constraint propagation revisited
    H. Shinkai and G. Yoneda
    The 19th Rironkon Symposium [Rikkyo Univ., December 2006]

22. Numerical solutions in 5-dimensional momentarily static spacetime
    Y. Yamada and H. Shinkai
    The 10th Spacetime Singularity Workshop [KEK, January 2009]

23. Numerical investigation of black objects
    Y. Yamada and H. Shinkai
    The 3rd workshop on Higher-dimensional Black-holes [Kyoto, December 2009]

24. Black ring and hoop conjecture
    Y. Yamada and H. Shinkai
    The 24th Rironkon Symposium [NAOJ, November 2011]

25. Gravitational collapse in five-dimensional space-time
    Y. Yamada and H. Shinkai
    The 2nd AICS International Symposium, [RIKEN, Kobe, March 2012]

26. Wormholes in higher-dimensional gravity: Effects of Gauss-Bonnet gravity
    H. Shinkai and T. Torii
    The 26th Rironkon Symposium [Tokyo Univ., December 2013]

1.7 Presentations at the Official Society Meetings

1. Dynamical evolution of inhomogeneous planar universe
   H. Shinkai and K. Maeda
   The 41th Japan Physical Society Meeting, [Keio University, March 1992]

2. Gravitational waves in the expanding universe with cosmological constant
   H. Shinkai and K. Maeda
   The 1992 Japan Astronomical Society Spring Meeting, [Osaka, May 1993]

3. Gravitational waves in the expanding universe with cosmological constant
   H. Shinkai and K. Maeda
   The 42th Japan Physical Society Meeting, [Niigata University, October 1993]

4. Cosmic no hair conjecture in a planar universe
   H. Shinkai and K. Maeda
   The 43th Japan Physical Society Meeting, [Tohoku, March 1993]

5. Generality of inflation in a planar universe
   H. Shinkai and K. Maeda
   The 1993 Japan Astronomical Society Spring Meeting, [Sagamihara, May 1993]

6. Principal null directions for numerical relativists
   H. Shinkai, L. Gunnarsen and K. Maeda
   The 1993 Japan Astronomical Society Fall Meeting, [Kagoshima University, October 1993]

7. Inhomogeneous scalar field initial data in the spherically symmetric spacetime
   H. Shinkai, T. Chiba, K. Nakao and T. Nakamura
   The 45th Japan Physical Society Meeting, [Kyushu Kougyou University, March 1994]

8. Numerical studies of topological inflationary scenario
   H. Shinkai, N. Sakai, T. Tachizawa and K. Maeda
   The 46th Japan Physical Society Meeting, [Yamagata University, October 1994]

9. Gravitational Faraday effects in colliding gravitational waves
   H. Shinkai
   The 1995 Japan Astronomical Society Spring Meeting, [Gakugei University, March 1995]

10. On connection approach to numerical relativity
    G. Yoneda and H. Shinkai
    The 47th Japan Physical Society Meeting, [Kanagawa University, March 1995]

11. Reality conditions and constraints in the Ashtekar formulation
    H. Shinkai and G. Yoneda
    The 48th Japan Physical Society Meeting, [Nagoya University, October 1995]

12. Can we pass degenerate points in the Ashtekar formulation?
    A. Nakamichi, H. Shinkai and G. Yoneda
    The 49th Japan Physical Society Meeting, [Kanazawa University, April 1996]

13. Numerical relativity with help of Ashtekar's variables
    H. Shinkai and G. Yoneda
    The 49th Japan Physical Society Meeting, [Kanazawa University, April 1996]

14. Lorenzian dynamics in Ashtekar gravity
    H. Shinkai and G. Yoneda
    The 50th Japan Physical Society Meeting, [Saga University, October 1996]

15. Boson stars in scalar-tensor theories
    H. Shinkai, G.L. Comer and J. Balakrishna
    The 53th Japan Physical Society Meeting, [Nihon University, March 1998]

16. Constructing hyperbolic systems in the Ashtekar formulation of general relativity
    H. Shinkai and G. Yoneda
    The American Physical Society Meeting, [Atlanta, March 1999]

17. Post-Newtonian Initial Data Formulation for the Neutron Star Grand Challenge Project
    H. Shinkai, M. Miller, W-M. Suen, M. Tobias, C. M. Will
    The American Physical Society Meeting, [Atlanta, March 1999]

18. Hyperbolic systems of general relativity in the Ashtekar formulation
    G. Yoneda and H. Shinkai
    The 54th Japan Physical Society Meeting, [Shimane University, September 1999]

19. Constraint propagation of the Einstein equations
    G. Yoneda and H. Shinkai
    The 56th Japan Physical Society Meeting, [Chuo University, March 2001]

20. Quasi-spherical approach for numerical relativity
    H. Shinkai and S.A. Hayward
    The 56th Japan Physical Society Meeting, [Chuo University, March 2001]

21. Formulation of Einstein equations for stable numerical simulations
    H. Shinkai and G. Yoneda
    The 2002 Spring Japan Physical Society Meeting, [Ritsumeikan University, March 2002]

22. Formulation of Einstein equations for stable numerical simulations: II
    G. Yoneda and H. Shinkai
    The 2002 Fall Japan Physical Society Meeting, [Rikkyo University, September 2002]

23. Fate of the traversible wormholes
    H. Shinkai and S.A. Hayward
    The 2002 Fall Japan Physical Society Meeting, [Rikkyo University, September 2002]

24. Formulation of Einstein equations for stable numerical simulations: III
    H. Shinkai and G. Yoneda
    The 2003 Spring Japan Physical Society Meeting, [Tohoku-Gakuin University, March 2003]

25. Stable numerical simulations via adjusted ADM systems
    H. Shinkai and G. Yoneda
    The 2007 Spring Japan Physical Society Meeting, [Tokyo Metropolitan Univ., Mar. 2007]

26. Stable numerical simulations via adjusted BSSN systems
K. Kiuchi and H. Shinkai
The 2007 Fall Japan Physical Society Meeting, [Hokkaido Univ., Sep. 2007]

27. Black-hole formation and hoop conjecture in 5-dimensional space-time
Y. Yamada and H. Shinkai
The 2009 Fall Japan Physical Society Meeting, [Konan Univ., Sep. 2009]

28. Numerical analysis of black-ring in 5-dimensional space-time
Y. Yamada and H. Shinkai
The 2010 Spring Japan Physical Society Meeting, [Okayama Univ., Mar. 2010]

29. Constraint propagation of C^2-adjusted BSSN Equations
T. Tsuchiya, G. Yoneda and H. Shinkai
The 2010 Fall Meeting of Japan Society for Industrial and Applied Mathematics, [Meiji Univ., Sep. 2010]

30. Numerical analysis of black-ring in 5-dimensional space-time (II)
Y. Yamada and H. Shinkai
The 2010 Fall Japan Physical Society Meeting, [Kyushu Inst. Tech., Sep. 2010]

31. Gravitational collapses and naked singularity in 5-dimensional space-time
Y. Yamada and H. Shinkai
The 2011 Spring Japan Physical Society Meeting, [–cencelled–, Mar. 2011]

32. Black ring and hoop conjecture
Y. Yamada and H. Shinkai
The 2011 Fall Japan Physical Society Meeting, [Hirosaki U., Sep. 2011]

33. Five-dimensional gravitational collapses: effects of angular momentum
Y. Yamada and H. Shinkai
The 2012 Spring Japan Physical Society Meeting, [Kwansei U., Mar. 2012]

34. Wormhole dynamics in Gauss-Bonnet gravity
H. Shinkai and T. Torii
The 2013 Spring Japan Physical Society Meeting, [Hiroshima U., Mar. 2013]

35. Instability of wormholes
H. Shinkai and T. Torii
The 2015 Spring Japan Astronomical Society Meeting, [ICU, Mar. 2014]

36. Stability of Wormholes in higher-dimensional spacetime
T. Torii and H. Shinkai
The 2014 Spring Japan Physical Society Meeting, [Tokai U., Mar. 2014]

37. Topological wormholes and their stability
T. Torii and H. Shinkai
The 2015 Spring Japan Physical Society Meeting, [Waseda U., Mar. 2015]

38. Dynamics in n-dimensional Gauss-Bonnet gravity
H. Shinkai and T. Torii
The 2015 Spring Japan Physical Society Meeting, [Waseda U., Mar. 2015]

39. Dynamics in n-dimensional Gauss-Bonnet gravity II
H. Shinkai and T. Torii
The 2016 Spring Japan Physical Society Meeting, [Tohoku Gakuin U., Mar. 2016]

40. Possibility for judging formation scenario of super-massive black holes using gravitational waves
H. Shinkai, N. Kanda and T. Torii
The 2016 Fall Japan Astronomical Society Meeting, [Ehime U., Mar. 2016]

1.8 Refereed Research Articles in Japanese

1. Numerical Study of Cosmic No Hair Conjecture
H. Shinkai, T. Tsukamoto and K. Maeda
Bulletin of the Centre for Informatics, Waseda University, Vol.17, p.1-12 (1994)

2. Can We Determine the Theory of Gravity by Observing Gravitational Waves?
M. Saijo, H. Shinkai and K. Maeda
Bulletin of the Centre for Informatics, Waseda University, Vol.21, p.21-34 (1997)

3. Culture and History via Ancient Star Charts – Software for comparison of 28 constellations written in Takamatsuzuka Tomb with Present chart –
古星図に見る歴史と文化 –高松塚古墳に描かれた 28 星宿を示すアプリケーションの制作–
H. Kawazu and H. Shinkai
in *Tenmon-Kyouiku*, May 2008 issue (Bulletin of the Society for Teaching and Popularization of Astronomy).

4. Difficulty Levels of *SUDOKU* – Proposals of *D*-Score based on Solving Logics –
数独パズルの難易度判定 — 解法ロジックを用いた数値化の提案 —
T. Dode and H. Shinkai
Memoirs of Osaka Institute of Technology, A56, p.1-18 (2011)

5. Goryu Asada and Kepler's third law of planetary motion
麻田剛立とケプラーの惑星運動第 3 法則
H. Shinkai
Memoirs of Osaka Institute of Technology, 61, p.27-36 (2016)

2 Activities in Public Relationships

2.1 Textbooks

1. Calculus with Applications: A Structured Approach (in Japanese, 244 pages)
   H. Shinkai
   Kyoritsu Shuppan Inc. (2009, April) ISBN 978-4-320-01879-2
   『徹底攻略　微分積分』（真貝著，共立出版）

2. Ordinary Differential Equations with Applications: A Structured Approach (in Japanese, 248 pages)
   H. Shinkai
   Kyoritsu Shuppan Inc. (2010, August) ISBN 978-4-320-01936-2
   『徹底攻略　常微分方程式』（真貝著，共立出版）

3. Probability and Statistics with Applications: A Structured Approach (in Japanese, 280 pages)
   H. Shinkai
   Kyoritsu Shuppan Inc. (2012, March) ISBN 978-4-320-11009-0
   『徹底攻略　確率統計』（真貝著，共立出版）

4. Calculus with Applications: A Structured Approach, Second ed. (in Japanese, 256 pages)
   H. Shinkai
   Kyoritsu Shuppan Inc. (2013, December) ISBN 978-4-320-11060-1
   『徹底攻略　微分積分　改訂版』（真貝著，共立出版）

5. Physics answers to “why?” in your daily life (in Japanese, 272 pages)
   H. Shinkai
   Morikita Shuppan Inc. (2015, October) ISBN 978-4-627-15611-1
   『日常の「なぜ」に答える物理学』（真貝著，森北出版）

2.2 General Books

1. Timemachine and Science of Space-time (in Japanese, 240 pages)
   H. Shinkai
   Natsume Shuppan Inc. (2011, February) ISBN 978-4-816-35025-2
   『タイムマシンと時空の科学』（真貝著，ナツメ社）

2. Black-hole, Expanding Universe, and Gravitational Wave (in Japanese, 344 pages)
   H. Shinkai
   Kobunsha Inc. (2015, September) ISBN 978-4-334-03877-9
   『ブラックホール・膨張宇宙・重力波　一般相対性理論の 100 年と展開』（真貝著，光文社新書）
   Korean version from Kachi-Book Pub. (2017)

2.3 Translations

1. Life in the Universe, lectures by S.W.Hawking,
   『宇宙における生命』（ホーキング著，佐藤勝彦監訳，降旗康彦・千葉剛・真貝寿明・坂井伸之共訳，NTT 出版，1993）

2. Numerical Relativity and Black Holes
   by P.Anninos, J.Masso, E.Seidel and W-M.Suen (Physics World, 1996 July, p43)
   『パリティ』1997 年 6 月号

3. How to build a Universe
   by Ben Gilliland
   『宇宙のつくり方』（ギリランド著，真貝寿明・鳥居隆訳，丸善出版, 2016）

2.4 Author and Editorial Contributions

1. 『先端科学事典』(丸善出版, 2003) 3 項目執筆
2. 『天文宇宙検定公式問題集《１級 天文宇宙博士》』 (天文宇宙検定委員会 編，恒星社厚生閣, 2012) 問題執筆
3. 『天文宇宙検定公式問題集《１級 天文宇宙博士》』 (天文宇宙検定委員会 編，恒星社厚生閣, 2014) 問題執筆
4. 『天文宇宙検定公式問題集《１級 天文宇宙博士》』 (天文宇宙検定委員会 編，恒星社厚生閣, 2016) 問題執筆
5. 『相対論と宇宙の事典（仮)』(朝倉書店, 2017)　「第 2 章　一般相対性理論」編集担当

2.5 Articles in Japanese Magazines

1. Centre for Gravitational Physics and Geometry, Pennsylvania State Univeristy
   『天文月報』（海外研究グループ紹介シリーズの 1 編）　2001 年 4 月号
2. 質量とエネルギー
   『数理科学』（サイエンス社）2003 年 12 月号
3. ワームホール：最近の研究から
   『パリティ』（丸善）2003 年 5 月号
4. テンソル計算ソフトウェア リーマンテンソルが一瞬で計算できる
   『数理科学』（サイエンス社）2015 年 7 月号
5. 人類が初めて観測した「重力波」を、アインシュタインは 100 年前に予言していた
   『クーリエジャポン電子版』2016 年 3 月
6. 予想通りで驚いた　重力波初観測の報道に接して
   『窮理』4 号 (2016)
7. 大学初年次における科学力と高大接続　科学リテラシーテストの結果報告
   『学術の動向』（日本学術会議編集協力，日本学術協力財団発行）2017 年 1 月号

2.6 Book Reviews

1. 新著紹介「宇宙と素粒子 30 講」（戸田盛和著，朝倉書店，2002）
   『物理学会誌』2002 年 11 月号
2. 新著紹介小特集「大学初年度のテキスト (2)：計算機を使う教材」
   『物理学会誌』2003 年 8 月号
3. 新著紹介「パソコンで宇宙物理学　計算宇宙物理学入門（ポール・ヘリングス著，川端潔訳，国書刊行会，2009)」 『物理学会誌』2009 年 11 月号
4. 新著紹介「科学をどう教えるか: アメリカにおける新しい物理教育の実践（E.F. レディッシュ著，日本物理教育学会監修, 翻訳) 『物理学会誌』2013 年 5 月号

2.7 Interviews

1. 映画『LOOPER/ルーパー』 の配給元から、コメントを求められたので回答。web 掲載 2012 年 12 月
2. 雑誌『R25』「映画マイティ・ソーに出てくるワームホール」解説 2013 年 6 月
3. 雑誌『子供の科学』10 月号　特集「科学の謎　未解決ファイル」子供達の謎第 1 位タイムマシン　インタビュー 2014 年 10 月
4. 電子マガジン『Synodos.jp』「生き残っていく理論が物理となる—宇宙と相対性理論の最前線」2015 年 11 月
5. 劇団 SET「虹を渡る男たち」公演パンフレット掲載「スペシャル対談 真貝寿明 vs 三宅裕司 人類悲願の夢。タイムマシンに「どこでもドア」、実現するのはどっち!?」2015 年 11 月

2.8 Author and Editorial Contributions in Popular Magazines, Newspapers

1. 科学欄「相対性理論って何?」
   毎日新聞 2011 年 10 月 25 日朝刊
2. 光速の壁がやぶられた!? ニュートリノは本当に超光速なのか
   『ニュートン』2011 年 11 月号
3. タイムトラベルを科学する
   『ニュートン』2012 年 3 月号
4. 『相対性理論とタイムトラベル　キップ・ソーン博士が語る時空旅行』
   ニュートン別冊 2012 年 5 月刊
5. 『光速 C』
   ニュートン別冊 2012 年 6 月刊
6. タイムトラベル論
   『ペン＋』（藤子 F 不二夫　特集号）2012 年 9 月号
7. 『あらゆる単位と重要原理・法則集』
   ニュートン別冊 2014 年 3 月刊
8. 『時間とは何か』
   ニュートン別冊 2016 年 7 月刊
9. 科学欄「ブラックホールの実像に迫る」
   毎日新聞 2016 年 3 月 24 日朝刊

2.9 Public Lectures (selected)

1. 兵庫県立大学主催　日食観測アカデミックツーリズム・サイエンストーク「タイムマシンはできるのか　相対性理論入門」2009 年 7 月
2. ラジオ NIKKEI 第 2（RN2）「Groovin' x Groovin'」番組.『時空の科学　タイムマシンの可能性』全 4 話解説　2014 年 1 月
3. あべのハルカス展望台　皆既月食観望会　解説.　Ustream でも中継.　2014 年 10 月

4. あべのハルカス展望台　皆既月食観望会　解説．2015 年 4 月
5. 西宮市宮水学園マスター講座「日常は物理で満ちている」全 10 回．2015 年 5 月-9 月
6. 日本天文学会 (首都大学東京)，天文教育フォーラム「教科書：読む・読ませる・書く」招待講演　2016 年 3 月
7. JAHOU 年会 (科学技術館),「重力波の初観測」2016 年 3 月
8. 科学技術館 科学ライブショー「ユニバース」 重力波検出記念特別番組．2016 年 5 月
9. 西宮市生涯学習ラジオ講座 「宇宙はここまで理解された　宇宙物理学入門」全 10 回．2016 年 6 月-3 月
10. 摂南大学第 1 回数理セミナー　数理教育の教材開発に関する討論会 「私が教科書執筆で心がけたこと」2016 年 7 月
11. 近鉄あべのハルカス本店宇宙博 2016，特別セミナー「ブラックホールはどう見える？」2016 年 8 月
12. サイエンスアゴラ 2016　シンポジウム 『これからの高校理科教育のありかた』登壇.「大学初年次における科学力と高大接続」2016 年 11 月
13. 天文教育普及研究会 2017 年年会　天文学最前線『重力波』2017 年 8 月予定

2.10 Talks for High-School Students (selected)

1. 栄光学園高校,「理系という職業選択」2009 年 11 月
2. 東海高校・中学校，サタデープログラム講演「相対性理論の世界」2014 年 2 月
3. 常翔学園高校,「ブラックホール」2014 年 11 月
4. 日本天文学会 (大阪大学)　ジュニアセッション座長　2015 年 3 月
5. Why and How we know there are blackholes Introduction to Einstein's theory
   International Science School 2016, August 6, 2016, at Yokosuka Research Park
   Lecture note is available at
   `http://www.oit.ac.jp/is/~shinkai/201608school/`