

List of All Publications  
Yasuo Matsushita  
For 2025 Academic Year

January 6, 2025

2024 November 23, Submitted paper

Y. Matsushita and Peter R. Law,  
Riemannian and neutral metrics on 4-manifolds admitting a field of 2-planes and the associated two kinds of almost complex structures

**Published Papers (refereed)**

2018: *Lecture Notes on Indefinite Manifolds & Related Topics, pp.111-174*

Proceedings of The Twenty-First International Workshop on Hermitian Symmetric Spaces and Submanifolds, Volume 21, Eds. By Young Jin Suh, Yoshihiro Ohnita, Byung Hak Kim and Hyunjin Lee.

2016: Y. Matsushita, P. R. Law,

*Counterexamples to Goldberg Conjecture with reversed orientation on Walker 8-manifolds of neutral signature*, The 20th International Workshop on Hermitian Symmetric Spaces and Submanifold, Kyungpook National University, Daegu, Korea, 26 - 30, 2016. The 20th Proceedings [IWHSS2016], Springer Proceedings in Mathematics and Statistics, 2017. MR3710836

2015: Y. Matsushita, P. R. Law and N. Katayama,

*Neutral geometry in 4-dimension and counterexamples to Goldberg conjecture constructed on Walker 6-manifolds*, Proceedings of The 19th International Workshop on Hermitian-Grassmannian Submanifolds and Its Applications ¥& The 10th RIRCM-OCAMI Joint Differential Geometry Workshop, Institute for Mathematical Sciences (NIMS), Daejeon, South Korea, 26-28 October, 2015. MR3699631

2013: P. R. Law and Y. Matsushita,

*Real AlphaBeta-Geometries and Walker Geometry*, Journal of Geometry and Physics **65** (2013), 35-44.

2011: P. R. Law and Y. Matsushita,

*Algebraically Special, Real Alpha-Geometries*, Journal of Geometry and Physics **61** (2011), 2064-2080.

2011: Y. Matsushita,

*Geometric structures in four-dimension and almost Hermitian structures*, in AIP Conference Proceedings, Volume **1340**, International Workshop on Complex Structures, Integrability and Vector Fields (2011) 66-80.

2008: P. R. Law and Y. Matsushita

*A Spinor Approach to Walker Geometry*, Communications in Mathematical Physics **287**, (2008), 577-623.

2008: J. Davidov, J.C.Díaz-Ramos, E. García-Río, Y. Matsushita, O. Muskarov and R. Vázquez-

Lorenzo, *Hermitian Walker 4-manifolds*, Journal of Geometry and Physics **58** (2008), 307-

- 2008: E. García-Río, S. Haze, N. Katayama, and Y. Matsushita,  
*Symplectic, Hermitian and Kähler structures on Walker 4-manifolds*, Journal of Geometry **90** (2008), 56-65.
- 2007: Y. Matsushita,  
*Counterexamples of compact type to the Goldberg conjecture and various version of the conjecture*, pp.222-233, Proceedings of The 8th International Workshop on Contemporary Differential Geometry, *Complex Structures and Vector Fields*, Sofia, Bulgaria, August 20 - 26, 2006, eds. S. Dimiev and K. Sekigawa, World Scientific 2007.
- 2007: Y. Matsushita, S. Haze and P. R. Law,  
*Almost Kähler-Einstein structures on 8-dimensional Walker manifolds*, Monatshefte für Mathematik **150** (2007), 41-48.
- 2007: J. Davidov, J.C.Díaz-Ramos, E. García-Río, Y. Matsushita, O. Muskarov and R. Vázquez-Lorenzo, *Almost Kähler 4-manifolds*, Journal of Geometry and Physics **57** (2007), 1075-1088.
- 2006: Y. Matsushita,  
*Four-dimensional geometric structures and almost complex structures --- Solvmanifolds  $Sol^4_{\{m,n\}}$  (Neutral Version) --- : III-N*, JP Journal of Geometry and Topology **6** (2), (2006), 197-210.
- 2006: Y. Matsushita,  
*Four-dimensional geometric structures and almost complex structures --- Nilmanifolds  $Nil^4$  (Neutral Version) --- : II-N*, JP Journal of Geometry and Topology **6** (2) (2006), 183-195.
- 2006: Y. Matsushita,  
*Four-dimensional manifolds with two kinds of double almost Hermitian structures*, JP Journal of Geometry and Topology **6** (1) (2006), 1-23.
- 2006: Y. Matsushita,  
*Four-dimensional geometric structures and almost complex structures, Product manifolds  $H^3 \times E^1$  --- Riemannian Version ---: IV-R*, JP Journal of Geometry and Topology **6** (1) (2006), 35-44.
- 2006: Y. Matsushita,  
*Four-dimensional geometric structures and almost complex structures, solvmanifolds  $Sol^4_{\{m,n\}}$  --- Riemannian Version ---: III-R*, JP Journal of Geometry and Topology **6** (1), (2006), 25-33.
- 2005: Y. Matsushita,  
*Four-dimensional geometric structures and almost complex structures General Procedure (Neutral Version) --- : I-N*, JP Journal of Geometry and Topology **5** (3), (2005), 251-274.
- 2005: Y. Matsushita,  
*Four-dimensional geometric structures and almost complex structures, --- Nilmanifolds  $Nil^4$  (Riemannian Version) --- : II-R*, JP Journal of Geometry and Topology **5** (2), (2005), 177-186.
- 2005: Y. Matsushita,  
*Four-dimensional geometric structures and almost complex structures, General Procedure (Riemannian Version) --- : I-R*, JP Journal of Geometry and Topology **5** (2) (2005), 155-176.

- 2005: A. Bonome, R. Castro, L. M. Hervella and Y. Matsushita,  
*Flat almost Norden metrics with nonintegrable almost complex structures in dimension four*,  
JP Journal of Geometry and Topology **5** (2) (2005), 141-153.
- 2005: A. Bonome, R. Castro, L. M. Hervella and Y. Matsushita,  
*Construction of Norden structures on neutral 4-manifolds*, JP Journal of Geometry and Topology **5** (2) (2005), 121-140.
- 2005: I. García-Ramírez, E. García-Río and Y. Matsushita,  
*Application of Bochner-Weizenböck formulas to symplectic and complex pairs to be Kähler pairs in dimension four*, Proceedings in honor of Professor K. Sekigawa's 60th birthday, Topics in Almost Hermitian Geometry and the Related Fields, eds. Y. Matsushita, E. García-Río, H. Hashimoto, T. Koda and T. Oguro, World Scientific, July 2005.
- 2005: Y. Matsushita,  
*The existence of indefinite metrics of signature  $(+ + - -)$  and two kinds of almost complex structures in dimension four*, Proceedings of The Seventh International Workshop on Complex Structures and Vector Fields, Plovdiv, Bulgaria, August 31 - September 4, 2004, Contemporary Aspects of Complex Analysis, Differential Geometry and Mathematical Physics, eds. S. Dimiev and K. Sekigawa, World Scientific July 2005.
- 2005: Y. Matsushita,  
*On Euler characteristics and Hirzebruch indices of four-dimensional almost para-Hermitian manifolds*, JP Journal of Geometry and Topology **5** (2) (2005), 115-190.
- 2005: Y. Matsushita,  
*Walker 4-manifolds with proper almost complex structures*, Journal of Geometry and Physics **55** (2005), 385-398.
- 2005: M. Chaichi, E. García-Río and Y. Matsushita,  
*Curvature properties of four-dimensional Walker metrics*, Classical and Quantum Gravity **22** (2005), 559-577.
- 2004: Y. Matsushita,  
*Four-dimensional Walker metrics and symplectic structures*, Journal of Geometry and Physics **52** (2004), 89--99.
- 2001: Y. Matsushita and P. R. Law,  
*Hitchin-Thorpe Type Inequalities for Pseudo-Riemannian 4-Manifolds of Metric Signature  $(+ + - -)$* , Geometriae Dedicata **87** (2001), 65-89.
- 2001: E. García-Río, R. Vázquez-Lorenzo and Y. Matsushita,  
*Paraquaternionic Kähler Manifolds*, Rocky Mountain Journal of Mathematics **31** (2001), 237-260.
- 2000: E. García-Río and Y. Matsushita,  
*Isotropic Kähler structures on Engel 4-manifolds*, Journal of Geometry and Physics **33** (2000), 288-294.
- 1997: A. Bonome, R. Castro, E. García-Río, Y. Matsushita and L. M. Hervella,  
*Pseudo-Chern classes and opposite Chern classes of indefinite almost Hermitian manifolds*, Acta Mathematica Hungaria **75** (1997), 299-16. 1995:

- 1995: A. Bonome, R. Castro, E. García-Río, Y. Matsushita and L. M. Hervella,  
*Kähler-Einstein metrics on a K3 surface cannot be almost Kähler with respect to an opposite almost complex structure*, Kodai Mathematical Journal **18** (1995) , 506-514.
- 1995: A. Bonome, R. Castro, E. García-Río, Y. Matsushita and L. M. Hervella,  
*Almost complex manifolds with holomorphic distributions*, Rendiconti di Mathematicas (Roma) **14** (1995), 567-589.
- 1995: A. Bonome, R. Castro, E. García-Río, Y. Matsushita and L. M. Hervella,  
*Null holomorphically flat indefinite almost Hermitian manifolds*, Illinois Journal of Mathematics **39** (1995), 635-660.
- 1995: Y. Matsushita,  
*Equivalence classes of fields of 2-planes and two kinds of almost complex structures on compact 4-dimensional manifolds*, manuscripta mathematica **88** (1995), 409-415.
- 1993: Y. Matsushita,  
*Some remarks on fields of 2-planes on compact smooth 4-manifolds*, Advanced Studies in Pure Mathematics **22** (1993), 153-167.
- 1991: Y. Matsushita,  
*Fields of 2-planes and two kinds of almost complex structures on compact 4-dimensional manifolds*, Mathematische Zeitschrift **207** (1991), 281-291.
- 1988: Y. Matsushita,  
*Fields of 2-planes on compact simply connected smooth 4-manifolds*, Mathematische Annalen **280** (1988), 687-689.
- 1987: Y. Matsushita,  
*Pseudo-Chern classes of an almost pseudo-Hermitian manifold*, Transactions of American Mathematical Society **301** (1987), 665-677.
- 1985: Y. Matsushita,  
*Pseudo-Pontrjagin classes*, Proceedings of American Mathematical Society **93** (1985), 521-524.
- 1985: N. Katayama and Y. Matsushita,  
*A problem on closed orbits in a cosmological model*, Tensor (N.S.) **42** (1985), 174-178.
- 1983: Y. Matsushita,  
*Thorpe-Hitchin inequality for compact Einstein 4-manifolds of metric signature  $(+ + - -)$  and the generalized Hirzebruch index formula*, Journal of Mathematical Physics **24** (1983), 36-40.
- 1981: Y. Matsushita,  
*Inequality for the Euler characteristic of compact Einstein 4-manifolds*, Mathematica Japonica **26** (1981), 77-79.
- 1981: Y. Matsushita,  
*On Euler characteristics of compact Einstein 4-manifolds of metric signature  $(+ + - -)$* , Journal of Mathematical Physics **22** (1981), 979-82.

Preprint (to be submitted soon):

Yasuo Matsushita and Peter R. Law,

*Harmonic indefinite Kahler structures on Walker manifolds of dimension  $2n$  with a parallel*

*field of totally null 2-planes*