MOHAMMED GUEDIRI

CURRICULUM VITAE

Current Position:

Professor of Mathematics (King Saud University - Saudi arabia)

Address:

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Research Interests:

Lorentz Geometry, Lie Groups.

Education:

B.Sc., Mathematics, Annaba University, Algeria, 1990.
RESULTS : GPA : 3,22 (i.e. 16,10/20)
Depth Studies Diploma, Mathematics (Analysis, Geometry and Mechanics), Montpellier II University, France, 1991.
Ph.D., Mathematics, Montpellier II University, France, 1995.
Title : Completeness of compact pseudo-Riemannian manifolds.
Adviser : Professor Jacques Lafontaine.

Employment:

2007– present : Professor, Department of Mathematics, King Saud University.
2003–2007 : Associate Professor, Department of Mathematics, King Saud University.
1995–2003 : Assistant Professor, Department of Mathematics, King Saud University.
1994–1995: Postdoctoral Position, Department of Mathematics, Montpellier II University.

Academic Activities:

I served during the last five years as a Managing Editor of Arab Journal of Mathematical Sciences. I also served or serve as a referee for some scientific journals.

Supervision of MSc Students:

1. Mona Al-Asfur, *Curvatures of left-invariant Riemannian metrics on Lie groups,* (2006).
2. Kholoud Al-Balawi, *Complete left-symmetric structures on Lie algebras,* (2007).
3. Salma Al-Humayan, *Closed geodesics in Riemannian 2-step nilmanifolds,* (2012).

Supervision of PhD Students:

1. Nora Al-Shahri, *Lorentzian submanifolds satisfying some curvature conditions,* (May 2012).
2. Mona Al-Asfur, *Curvatures of left-invariant Lorentzian metrics on Lie groups,* (September 2014).
2. Kholoud Al-Balawi, *Left-symmetric structures on solvable Lie algebras,* (October 2014).

Research Grants:

1. Faculty of Science Research Center, KSU. Research Center Project No. (Math/1419/16).
2. Faculty of Science Research Center, KSU. Research Center Project No. (Math/2007/06).

Recent talks I have given at workshops:

1. "*Left-invariant Lorentzian geometry of 2-step nilpotent Lie groups*". The Analysis, Geometry and Representations on Lie Groups and Homogeneous. December 8-12, 2014, Marrakech - Morocco.

2. "*Introduction to Lorentzian manifolds*". The 5^{th} School on Geometry. November 19-23, 2013, Ecole Normale Superieure, Rabat, Morocco.

3. "*On a remarkable class of left-symmetric algebras*". Fourth Workshop on Algebra, Geometry and Applications. December 8, 2012, Department of Mathematics and Statistics, Sultan Qaboos University, Oman.

4. "*Complete left-invariant affine structures on the oscillator group*". Southeastern Lie Theory Workshop: Finite and Algebraic Groups. June 1 - 4, 2011, University of Virginia, USA.

5. "*Global hyperbolicity of left-invariant Lorentz metrics on Lie groups*". The Kortrijk workshop on Discrete Groups and Geometric Structures, with Applications III (Crystallographic Groups and their generalizations V). May 26-30, 2008, K. U. Leuven Campus Kortrijk, Belgium.

6. "*A new class of compact spacetimes without closed nonspacelike geodesics*". The Kortrijk workshop on Discrete Groups and Geometric Structures, with Applications II (Crystallographic Groups and their generalizations IV). May 31 - June 3, 2005, Ostend, Belgium.

7. "*Closed geodesics in compact spacetimes*". Global geometrical aspects of gravitation. June 21 - 24, 2005, UMPA Lyon, France.

Last scientific visits:

1.

2. July 2012, The Max-Plank-Institut fűr Mathematik, Bonn, Germany.

3. July - August 2009, The Max-Plank-Institut fűr Mathematik, Bonn, Germany.

4. July - August 2003, The Max-Plank-Institut fűr Mathematik, Bonn, Germany.

Published Papers:

1. M. Guediri and J. Lafontaine, Sur la completude des varietes pseudo-riemanniennes, Journal of Geometry and Physics 15 (1995), 150–158.

2. M. Guediri, Sur la completude des pseudo-metriques invariantes a gauche sur les groupes de Lie nilpotents, Rend. Sem. Mat. Univ. Pol. Torino 52 (1994), 371–376.

3. M. Guediri, On completeness of left-invariant Lorentz metrics on solvable Lie groups, Rev. Mat. Univ. Complut. Madrid 9 (1996), no. 2, 337–350.

4. M. Guediri, On the geodesic connectedness of simply connected Lorentz surfaces, Ann. Fac. Sci. de Toulouse VI No. 3 (1997), 499–510.

5. M. Guediri, On the existence of closed timelike geodesics in compact spacetimes, Mathematische Zeitchrift 239 (2002), 277-291.

6. M. Guediri, On the existence of closed timelike geodesics in compact spacetimes. II, Mathematische Zeitchrift 244 (2003), 577–585.

7. M. Guediri, On the nonexistence of closed timelike geodesics in flat Lorentz 2-step nilmanifolds, Trans. Amer. Math. Soc. 355 (2003), 775–786.

8. M. Guediri, Lorentz geometry of 2-step nilpotent Lie groups, Geom. Dedicata 100 (2003), 10–51.

9. M. Guediri, Conformally flat Lorentz hypersurfaces, J. Geom. Phys. 47 (2003), 161–176.

10. M. Guediri, The timelike cut locus and conjugate points in Lorentz 2-step nilpotent Lie groups, Manuscripta Math. 114 (2004), 9–35.

11. M. Guediri, Compact flat spacetimes, Diff. Geom. and its Appl. 21 (2004), 283–295.

12. M. Guediri, On the global hyperbolicity of Lorentz 2-step nilpotent Lie groups, General Relativity and Gravitation 35 (2003), 1707–1714.

13. M. Guediri, Closed timelike geodesics in compact spacetimes, Trans. Amer. Math. Soc. 359 (2007), 2663–2673.

14. M. Guediri, A new class of compact spacetimes without closed causal geodesics, Geom. Dedicata 126 (2007), 177–185.

15. M. Guediri, A criterion for global hyperbolicity of left-invariant Lorentz metrics on Lie groups, J. Geom. Phys. 58 (2008), 48–54.

16. M. Guediri (with N. Alshehri), Semi-symmetric Lorentzian hypersurfaces in Lorentzian space forms, J. Geom. Phys. 71 (2013), 85-102.

18. M. Guediri (with Mona Bin-Asfour), Ricc-flat left-invariant Lorentzian metrics on 2-step nilpotent Lie groups, Archivum Mathematicum 50 (2014), 171-192.

19. M. Guediri, Novikov algebras carrying an invariant Lorentzian symmetric bilinear form, J. Geom. Phys. 82 (2014), 132-144.

20. M. Guediri, Classification of complete left-invariant affine structures on the Oscillator group, Mathematical Communications 19 (2014), 343-362.

21. M. Corrigendum to "Novikov algebras carrying an invariant Lorentzian symmetric bilinear form" , Journal Geom. Phys. 82 (2014), 132–144.

22. M. Guediri (with Kholoud Al-Balawi), Complete Left-Invariant Affine Structures on Solvable Non-Unimodular Three-Dimensional Lie Groups, Journal of Generalized Lie Theory and Applications 2015, 9:1 (2015), 1-11.

23. M. Guediri, A remarkable class of left-symmetric algebras and its relationship with Novikov algebras, Communications in Algebra 44 (2016), 2919–2937.

24. M. Guediri (with N. Alshehri), On the equivalence of two curvature conditions for Lorentzian hypersurfaces, To appear in Arab Journal of Mathematical Sciences.