Cesar R. S. da Silva

University of Minnesota Supercomputing Institute - 515 Walter Library, 117 Pleasant St SE, Minneapolis - MN 55455
phone: (612) 624-7425 / (612) 236-8792 e-mail: cesards@msi.umn.edu

Education

B. S.: Federal University of Rio Grande do Sul, Brazil, 1987 (Physics)
M. S.: Federal University of Rio Grande do Sul, Brazil, 1990 (Physics)
Ph. D.: Federal University of Rio Grande do Sul, Brazil, 1995 (Physics)

Professional Experience

- Research Associate, Supercomputing Institute, University of Minnesota (2005-present)
- Professor, Faculdade de Ciência da Computação, Universidade de Santo Amaro (2002-2004)
- Post-doctoral Associate, Instituto de Física, Universidade de São Paulo (1999-2002)
- Post-doctoral Associate, Chemical Engineering and Materials Science, U. of Minnesota (1996-1998)
- Post-doctoral Associate, Centro Nacional de Supercomputação na UFRGS (1995-1996)

Grants and Fellowships

- Graduate research fellowships: CAPES (Brazil) (1987-1990), National Research Council (Brazil) (1990-95,1995-96,1996-98), São Paulo State Research Foundation (Brazil) (1999-2002).
- Research Scholar, Minnesota Supercomputer Institute (1997-98)

Publications

1. C.R.S. da Silva, C. Scherer, "*Ion-Induced Energy Propagating Front And Migration of Point Defects in Metals*." Solid State Comm. **94**, 957 (1995).
2. C.R.S. da Silva, R.M. Wentzcovitch, "*First Principles investigation of the A7 to simple cubic transformation in As*." Comp. Mat. Sc. **8**, 219 (1997), (with animation video).
3. C.R.S. da Silva, L. Stixrude, R.M. Wentzcovitch, "*Elastic Constants and Anisotropy of Forsterite at High Pressures*." Geophys. Res. Lett. **24/25** (1997), p. 1963-66.
4. R.M. Wentzcovitch , C.R.S. da Silva, J. R. Chelikowsky, N. Binggeli, "*New phase and pressure induced amorphization in silica*." Phys. Rev. Lett. **80**, 2149 (1998).
5. R.M. Wentzcovitch, B.B. Karki, S.-i. Karato, and C.R.S. da Silva, "*High Pressure Elastic Anisotropy of $MgSiO_3$ Perovskite and Geophysical Implications*." Earth Planet. Sc. Lett. **164** (1998), p. 371.
6. C.R.S. da Silva, B.B. Karki, R.M. Wentzcovitch, and L. Stixrude, "*Ab initio study of the elastic behavior of $MgSiO_3$ ilmenite at high pressures*." Geophys. Res. Lett. **26** (1999) p. 943-946.
7. C.R.S. da Silva, R.M. Wentzcovitch, A. Patel, G.D. Price, S.-i Karato "*The Composition and Geotherm of the Lower Mantle: Constraints from the Calculated Elasticity of Silicate Perovskite*." Phys. Earth Planet. Int. **118** (2000), p. 103.
8. B.B. Karki, W. Duan, C.R.S. da Silva, R.M. Wentzcovitch, "*Ab initio structure of $MgSiO_3$-ilmenite at high pressure*." Amer. Mineral.'s **85** (2000).
9. C.R.S. da Silva, C. Scherer, "*Ion-Induced Energy Propagating Front And Migration of Point Defects in Metals - II*." Nucl. Inst. and Meth. in Phys. Res. B **174** (2001) P. 414.

10. C.R.S. da Silva, A. Fazzio, "*Formation and Structural Properties of the amorphous-crystal Interface in a nano-Si System*." Phys. Rev. B **64** (2001) 075301.

11. P. Venezuela, A.J.R. da Silva, C.R.S. da Silva, G. M. Dalpian, A. Fazzio, "*Ab Initio Studies of the $Si_{1-x}Ge_x$ Alloy and its Intrinsic Defects*." Comput. Mat. Sci. **22,** 62-66 (2001).

12. C.R.S. da Silva, A.J.R. da Silva, A. Fazzio, *, "Theoretical Investigation of the Pressure Induced Cubic-Diamond-β-Tin Phase Transition in the $Si_{0.5}Ge_{0.5}$"* Solid State Comm. **120** (2001) 369.

13. C.R.S. da Silva, J.F. Justo, A. Fazzio, "*Structural order and clustering in annealed a-SiC and a-SiC:H*." Phys. Rev. B. 65 (2002) 104108.

14. J. F. Justo, and Cesar R. S. da Silva, "*Modelling Amorphous Materials: Silicon Nitride and Silicon Carbide*", Def. And Diff. Forum 206-207 (2002) 19. Invited Review.

15. Cesar R. S. da Silva, "*Optimizing Metropolis Monte Carlo Simulations of Semiconductors.*" Comp. Phys.Comm. **153**, 392 (2003).

16. C.R.S. da Silva, J.F. Justo, I. Pereyra, "*Crystalline silicon oxycarbide: Is there a native oxide for silicon carbide?*", Appl. Phys Lett. **84**, 4845 (2004).

17. C.R.S. da Silva, J. F. Justo, and A. Fazzio, "*On the reversibility of hydrogen effects on the properties of amorphous silicon carbide*", J. of Non-Cryst. Solids. **338**, 299 (2004).

18. J.F. Justo, I. Pereyra, C.R.S. da Silva, I. Pereyra, L.V.C. Assali, "*Structural and electronic properties of $Si_{1-x}C_xO_2$*", Materials Science Forum **483**, 577 (2005).

19. C.R.S. da Silva, J.F. Justo, I. Pereyra, e L.V.C. Assali, "*A first principles investigation on hipothetical crystalline phases of silicon oxycarbide*", Diamond and Related Materials **14**, 1142 (2005)

20. D.A. Yuen, B.J Kadlec, E.F. Bollig, W. Dzwinel, Z. A.Garbow, and C.R.S. da Silva "*Clustering and Visualization of Earthquake Data in a Grid Environment*", Visual Geosciences **10**, 1 (2005).

21. T. Tsuchiya, R.M. Wentzcovitch, C.R.S. da Silva, S. de Gironeoli, "*Spin transition in magnesiowustite in earth's lower mantletite*" Phys. Rev. Lett. **96** 198501 (2006).

22. T. Tsuchiya, R.M. Wentzcovitch, C.R.S. da Silva, S. de Gironeoli, J. Tsuchiya, "*Pressure induced high spin to low spin transition in magnesiowustite*" Physica Status Solidi B **243** 2111 (2006).

23. P.R.C. da Silveira, C.R.S. da Silva, R.M. Wentzcovitch, "*Metadata Management for Distributed First Principles Calculations in VLab - A Collaborative Grid/Portal System for Geo-materials Computation*", In Press (2007).

24. C.R.S. da Silva, P.R.C. da Silveira, B.B. Karki, R.M. Wentzcovitch, P.A. Jensen, E.F. Bollig, M. Pierce, G. Erlebacher, D.A. Yuen, "*Virtual Laboratory for Planetary Materials: System Service Architecture Overview*", In Press (2007).

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