HELMUNT EDUARDO VIGO COTRINA

Doctor en física por el Centro Brasileiro de Pesquisas Físicas (Rio de Janeiro - Brasil). Docente investigador en la Universidad Privada del Norte (UPN). Investigador Renacyt (Código de registro P0019458). También he realizado 3 años de estancia posdoctoral en el Centro Brasileiro de Pesquisas Físicas. Mis líneas de investigación están dirigidas al área de Física de la Materia Condensada, con énfasis en el estudio del magnetismo en nanoestructuras (Nanomagnetismo) usando técnicas computacionales (simulación micromagnética). Soy revisor por pares en algunas revistas internacionales.

Publicaciones científicas en Scopus

1. **H.Vigo-Cotrina**, S. Urcia-Romero and A.P. Guimarães. Influence of perpendicular uniaxial anisotropy on the switching of a magnetic vortex. J. Appl. Phys. 137, 013909 (2025). DOI: 10.1063/5.0243258
2. S. Navarro-Vilca, S. Urcia-Romero and **H. Vigo-Cotrina**. Phys. Chem. Math., 2024, 15 (5), 597–620. DOI: 10.17586/2220-8054-2024-15-5-597-620.
3. **H. Vigo-Cotrina**, S.Navarro-Vilca and S. Urcia-Romero. Skyrmionium dynamics on a racetrack in the presence of a magnetic defect. J. Appl. Phys. 135, 163903 (2024). DOI: 10.1063/5.0207827
4. **H. Vigo-Cotrina**, S. Urcia-Romero and A.P. Guimarães. Magnetic interactions in vortex-state nanodisk arrays characterized by gradient magnetic vortex echo. J. Appl. Phys. 135, 083903 (2024). DOI: 10.1063/5.0194332
5. Urcia-Romero, S. R., **Vigo-Cotrina, H. E**. and Jáuregui-Rosas, S. R. (2024). INFLUENCE OF DIMENSION AND MAGNETIC INTERACTIONS ON ANNIHILATION AND NUCLEATION FIELDS OF PERMALLOY NANODISKS USING MICROMAGNETIC SIMULATIONS. MOMENTO, (68), 69–85. DOI: 10.15446/mo.n68.110938
6. **H. Vigo-Cotrina** and A. Guzmán-Arana. Elliptical kπ skyrmions in the presence of the anisotropic Dzyaloshinskii–Moriya interaction. Journal of Magnetism and Magnetic Materials 585 (2023) 171122. DOI: 10.1016/j.jmmm.2023.171122

7. **H. Vigo-Cotrina**, D.L. Monteiro, J.P.V. Urruchua and A.P. Guimarães. The emergence of kπ skyrmions and their spin wave modes in a ferromagnetic disk. Journal of Magnetism and Magnetic Materials 560 (2022) 169665. DOI: 10.1016/j.jmmm.2022.169665
8. **H. Vigo-Cotrina**. Spin wave modes of skyrmioniums in the presence of Dzyaloshinskii-Moriya interaction. Journal of Magnetism and Magnetic Materials 537 (2021). DOI: 10.1016/j.jmmm.2021.168166
9. **H. Vigo-Cotrina** and A.P. Guimarães. Spin wave modes of nanoellipses with a magnetic radial vortex configuration. Journal of Magnetism and Magnetic Materials 518 (2021) 167377. DOI: 10.1016/j.jmmm.2020.167377
10. **H. Vigo-Cotrina** and A.P. Guimarães. Switching of skyrmioniums induced by oscillating magnetic field pulses. Journal of Magnetism and Magnetic Materials 509 (2020) 166895. DOI: 10.1016/j.jmmm.2020.166895
11. **H. Vigo-Cotrina** and A.P. Guimarães. Creating skyrmions and skyrmioniums using oscillating perpendicular magnetic fields. Journal of Magnetism and Magnetic Materials 507 (2020) 166848. DOI: 10.1016/j.jmmm.2020.166848
12. **H. Vigo-Cotrina** and A.P. Guimarães. Parallels between a system of coupled magnetic vortices and a ferromagnetic/nonmagnetic (FM/NM) multilayer system. Journal of Magnetism and Magnetic Materials 497 (2020) 166009. DOI: 10.1016/j.jmmm.2019.166009
13. **H. Vigo-Cotrina** and A.P. Guimarães. Influence of the dipolar interaction in the creation of skyrmions in coupled nanodisks. Journal of Magnetism and Magnetic Materials 489 (2019) 165406. DOI: 10.1016/j.jmmm.2019.165406
14. **H. Vigo-Cotrina** and A.P. Guimarães. Writing and storing information in an array of magnetic vortex nanodisks using their azimuthal modes. Journal of Magnetism and Magnetic Materials 460 (2018) 160–164. DOI: 10.1016/j.jmmm.2018.03.064
15. **H. Vigo-Cotrina** and A.P. Guimarães. Single array of magnetic vortex disks uses in-plane anisotropy to créate different logic gates. Journal of Magnetism and Magnetic Materials 441 (2017) 14–20. DOI: 10.1016/j.jmmm.2017.05.027
16. **H. Vigo-Cotrina** and A.P. Guimarães. Controlling energy transfer time between two coupled magnetic vortex-state disks. J. Appl. Phys. 120, 213901 (2016). DOI: 10.1063/1.4971342

17. J. P. Sinnecker, **H. Vigo-Cotrina**, F. Garcia, E. R. P. Novais, and A. P. Guimarães. Interaction between magnetic vortex cores in a pair of nonidentical nanodisks. J. Appl. Phys. 115, 203902 (2014). DOI: 10.1063/1.4878875