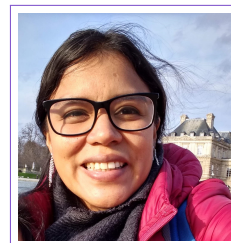


Cynthia Paola Contreras Medrano

Rua Monsenhor Macedo 134 - Apt 402
Niteroi, Rio de Janeiro
✉ ccontreras@cbpf.br, ccontreras@id.uff.br



Education

- 2013–2017 **Universidade Federal Fluminense, Rio de Janeiro, Brasil,**
Ph.D. Physics.
- 2011–2013 **Universidade Federal Fluminense, Rio de Janeiro, Brasil,**
M.Sc. Physics.
- 2010 **Universidad Nacional de Ingenieria, Lima, Perú,**
Bch. Physics.

Experience

- Aug 2017–
Ongoing **Postdoctoral research,** BRAZILLIAN CENTER FOR RESEARCH IN PHYSICS, CBPF, PDJ Nota 10 da FAPERJ.
 - Research of oxides with high frustrated magnetism.
 - Effect of structural disorder in complex magnetic oxides.
- Oct 2017–
Ongoing **Working on the Jackes Danon Mössbauer Laboratory, CBPF.**
 - Colaboration on the study of Co ferrite nanoparticles, published paper.
 - Colaboration on the study of ferrocene decomposition on resins, published paper.
 - Colaboration on the study of different materials with Mössbauer spectroscopy, magnetization and x-ray techniques.
- 2010 **Pre-professional practices, CONIDA - National Commission for Aerospace Research and Development in Peru,** LAGO Project, Cherenkov detector installation at CONIDA and Marcapomacocha.
I participated from the scratch of the project at the first year, we made a prototype detector calibrated in Lima (at sea level). With the skill acquired in the construction we made a larger detector with the electronic donated by PAO (Pierre Auger Observatory) and local material, improving the details such as the water qualities, internal cover, calibration, etc. Before I went, we installed a larger detector at 4800 MASL in Marcapomacocha. I acquired the calibration data of the detector and participate in all the mounting process in Lima and Marcapomacocha, helping to improve the construction of the detector with respect to the prototype.

Publications

- 2021 Medrano, C.P.C.; Sadrollahi, E.; Da Fonseca, R.G.M.; Passamani, E.C.; Freitas, D.C.; Continentino, M.A. ; Sanchez, D.R.; Litterst, F.J. ; Baggio-Saitovitch, E. **“Magnetic properties of Ni₅Sn(O₂BO₃)₂ ludwigite”**, *Physical Review B*, v. 103, p. 064430, 2021.
- 2020 J.P.Caland, Cynthia P.C. Medrano, A.CaytuerobE.Baggio-Saitovitch, F.J.Litterst, João M.Souares, M.Cabrera-Baez, E.Padrón-Hernández, T.Marques, Y.GuerraaBartolomeu C.Viana, F.E.P.Santos, R.Peña-García **“Preferential site occupancy of Ni ions and oxidation state of Fe ions in the YIG crystal structure obtained by sol-gel method”**, *Journal of Alloys and Compounds*, v.849, 156657, 2020.
- 2020 Carmen Greice Renda, Cynthia Paola Contreras Medrano, Leonardo Jose Dalla Costa, Fred Jochen Litterst, Elisa Maria Baggio Saitovitch, Claudio Jose Magon, Alexandre Jose Gualdi, Tiago Venâncio, Roberto Bertholdo, Ailton José Moreira, Gian Paulo Giovanni Freschi, Alessandra de Almeida Lucas **“Role of ferrocene-derived iron species in the catalytic graphitization of novolak resins”** , *Journal of Materials Science*, v. 56, p. 1298–1311, 2021.

- 2020 M. Cabrera-Baez, J. Munevar, R. M. Couto-Mota, Y. M. Camejo, *C. Contreras*, E. Baggio-Saitovitch, M. A. Avila, and C. Rettori “**Unconventional enhancement of ferromagnetic interactions in Cd-doped GdFe₂Zn₂₀ single crystals studied by ESR and ⁵⁷Fe Mossbauer spectroscopies**”, *Physical Review B*, v.102 (14), p. 144420, 2020.
- 2020 Garcia Silva, Arthur; Salcedo Rodríguez, KL; Contreras Medrano, CP; Silva Galvão Lourenço, Gustavo; Boldrin, Marlon; Baggio-Saitovitch, Elisa; Bufaiçal, Leandro “**Griffiths phase and spontaneous exchange bias in La_{1.5}Sr_{0.5}CoMn_{0.5}Fe_{0.5}O₆**”, *Journal of Physics: Condensed Matter*, v33, 6, 065804.
- 2019 Galdino, C.W.; Freitas, D.C.; *Medrano, C.P.C.*; Tartaglia R.; Rigitano D.; Oliveira J. F.; Mendonça, A.A.; Ghivelder, L.; Continentino, M.A.; Sanchez, D.R.; Granado, E. “**Magnetic, electronic, structural, and thermal properties of the Co₃O₂BO₃ ludwigite in the paramagnetic state**”, *Physical Review B*, v.100 (16), p. 165138, 2019.
- 2019 Lavorato, G.; Alzamora, M.; *Contreras, C.*; Burlandy, G.; Litterst, F.J.; Baggio-Saitovitch, E., “**Internal Structure and Magnetic Properties in Cobalt Ferrite Nanoparticles: Influence of the Synthesis Method**”, *Particle and Particle Systems Characterization*, v.36, p.1900061, 2019.
- 2018 *Medrano, C.P.C.*; Freitas, D. C.; Passamani, E.C.; Resende, J.A.L.C.; Alzamora, M.; Granado, E.; Galdino, C.W.; Baggio-Saitovitch, E.; Continentino, M.A.; Sanchez, D.R., “**Magnetic frustration in low-dimensional substructures of hulsite Ni_{5.15}Sn_{0.85}(O₂BO₃)₂**”, *Physical Review B*, v.98, p.054435, 2018.
- 2017 *Medrano, C.P.C.*; Freitas, D.C.; Passamani, E. C.; Pinheiro, C. B.; Baggio-Saitovitch, E.; Continentino, M.A.; Sanchez, D.R., “**Field-induced metamagnetic transitions and two-dimensional excitations in ludwigite Co_{4.76}Al_{1.24}(O₂BO₃)₂**”, *Physical Review B*, v.95, p.214419, 2017.
- 2016 Freitas, D.C.; *Medrano, C.P.C.*; Sanchez, D.R.; Rgueiro, M. Nunez; Rodriguez-Velamazan, J.A.; Continentino, M.A., “**Magnetism and charge order in the ladder compound Co₃O₂BO₃**”, *Physical Review B*, v.94,p.174409,2016.
- 2015 *Medrano, Cynthia P. Contreras*; Freitas, D.C.; Sanchez, D.R.; Pinheiro, C.B.; Eslava, G.G.; Ghivelder, L.; Continentino, M.A., “**Nonmagnetic ions enhance magnetic order in the ludwigite Co₅Sn(O₂BO₃)₂**”, *Physical Review B*, v.91, p.054402,2015.
- 2015 Pedro, S.S.; Caraballo Vivas, R.J.; Andrade, V.M.; Cruz, C.; Paixao, L.S.; *Contreras, C.*; Costa-Soares, T.; Caldeira, L.; Coelho, A.A.; Carvalho, A. Magnus G.; Rocco, D.L.; Reis, M.S., “**Effects of Ga substitution on the structural and magnetic properties of half metallic Fe₂MnSi Heusler compound'0'**”, *Journal of Applied Physics*, v.117,p.013902,2015.
- 2010 P. Galeotti ; I. GARCIA ; CONTRERAS, C.”**Neutrino Astrophysics**” In: 4th School on Cosmic Rays and Astrophysics, 2010, Sao Paulo. PoS (CRA School). Trieste: SISSA
- 2007 SALINAS, E. ; ATALAYA, J. ; HAMNERIUS, Y. ; SOLANO, C. J. ; GONZALES, D. ; CONTRERAS, C. ; LEON, C. ; SUMARI, M. A. ; DIMITRIOU, S. ; REZINKINA, M. . A new technique for reducing extremely low frequency magnetic field emissions affecting large building structures. *Environmentalist (Lausanne)*, v. 27, p. 571-576, 2007.

Participation in events

- 2021 **APS March Meeting**, *Video Conference*, **Poster presentation**, FECS Mini-grant. <https://engage.aps.org/fecs/blogs/adam-a-iaizzi1/2021/03/14/fecs-march-mini-grants>
- 2021 **Quantum Magnets in Extreme Conditions (QMEC)**, *Video Conference*, <https://ykohama.issp.u-tokyo.ac.jp/qmec2020/index.html>.
- 2020 **30th LNLS Annual Users Meeting (RAU)** , *Video Conference*, **Poster presentation**, <https://pages.cnpem.br/rau/>.
- 2020 **Correlated Disorder Workshop**, *Oxiborates: Low dimensionality and magnetic frustration*, Herzberg, Switzerland, **Oral Presentation**. <https://indico.psi.ch/event/8366/page/1842-scientific-program>
- 2020 **1st PSI Condensed Matter Summer Camp** , *Video Conference*, **Participation**, <https://indico.psi.ch/event/8386/page/1911-program>.

- 2019 **5th Mediterranean Conference on the Applications of the Mössbauer Effect MECAME**, *Partial order and magnetic frustration on low dimensional substructures of Ni oxyborates.*, Montpellier, France, **Oral Presentation**.
<https://mecame-gfsm2019.irb.hr/Programme>
- 2018 **XVI Latin American Conference on the Applications of the Mössbauer Effect LACAME.**, *Magnetic frustration in low dimensional substructures of hulsite Ni₅Sn_{0.85}(O₂BO₃)₂.*, Santiago de Chile, Chile, **Oral Presentation**.
- 2017 **XX Encontro Jacques Danon de Espectroscopia Mössbauer**, *Meeting*, Estudo das Propriedades Magnéticas da Hulsita Ni₅Sn(O₂BO₃)₂., Vitoria, Brasil.
Oral Presentation
- 2016 **Encontro de Física**, *Meeting*, Structural and magnetic study of a new hulsite Ni₅Sn(O₂BO₃)₂, Natal, Brazil.
Poster
- 2016 **I Conferencia Latinoamericana en Superconductividad y Magnetismo**, *The role of nonmagnetic ions in the magnetic properties of CoSn and CoAl ludwigites*, Lima, Peru, **Oral Presentation**.
- 2016 **II Workshop de Magnetismo do Estado do Rio de Janeiro.**, RJ, Brazil.
- 2015 **1st Brazilian X-ray Absorption Spectroscopy School (EBARX)**, Sao Paulo, Brazil.
- 2010 **4th School on Cosmic Rays and Astrophysics.**, *The LAGO projec in Peru.*, Sao Paulo, Brazil, **Poster**.

Skills

Solid state synthesis	ludwigite, hulsite, perovskite
XRD	Phase identification and refinement. Powder: GSAS II, Fullprof. Single Crystal: WinGX, ShelXle,
XAS Data processing	Demeter, Athena, Artemis
Mössbauer fitting	WinNormos, Recoil, Normos
Utilities	Origin, Mathematica, L ^A T _E X, Inkscape
Communication	English(SRW), Spanish(SRW), Portuguese(SRW), French(R)

Hobbies

Biking, dancing, movies and series