

CURRICULUM VITAE

Fausto Patricio Mena

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Facultad de Ciencias Físicas y Matemáticas
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PROFESIONAL PREPARATION

Escuela Politécnica Nacional (Ecuador), Physicist, 1996
University of Groningen (The Netherlands), MSc, 2000
University of Groningen (The Netherlands), PhD, 2004
Instrument Scientist, Netherlands Institute for Space Research (The Netherlands), 2004-2008

APPOINTMENTS

Assistant Professor, Electrical Engineering Department, Universidad de Chile (Chile), 2008-present

PUBLICATIONS RELEVANT TO THE PROJECT

F P Mena, J.W. Kooi, A.M. Baryshev, C.F.J. Lodewijk, R. Hesper, W. Wild and T.M. Klapwijk, "An SIS-based sideband-separating heterodyne mixer optimized for the 600 to 720 GHz band," J. Phys.: Conf. Ser. 97 012331 (2008).

N. Reyes, P. Zorzi, F. P. Mena, C. Granet, E. Michael, L. Bronfman, and J. May, "Construction of a Heterodyne Receiver for Band 1 of ALMA", Proc. 20th International Symposium on Space Terahertz Technology (2009).

A.M. Brayshev, F.P. Mena, J. Adema, R. Hesper, B. Jackson, G. Gerlofsma, M. Bekema, K.Keizer, H.Schaeffer, J. Barkhof, C.F.J. Lodewijk, D. Ludkov, T. Zijlstra, E. van Zeij, T.M. Klapwijk, W. Wild, "ALMABand 9 cartridge", Proc. 19th International Symposium on Space Terahertz Technology (2008).

F.P. Mena, J. Kooi, A.M. Baryshev, C.F.J. Lodewijk, T.M. Klapwijk, W. Wild, V. Desmaris, D. Meledin, A. Pavolotsky, and V. Belitsky, "RF Performance of a 600 - 720 GHz Sideband-Separating Mixer with All-Copper Micromachined Waveguide Mixer Block", Proc. 19th International Symposium on Space Terahertz Technology (2008).

C.F.J. Lodewijk, O. Noroozian, D.N. Loudkov, T. Zijlstra T, A.M. Baryshev, F.P. Mena, T.M. Klapwijk TM, "Optimizing superconducting matching circuits for Nb SIS mixers operating around the gap frequency," IEEE Transactions On Applied Superconductivity 17, 375-378 (2007).

ADITIONAL PUBLICATIONS

M. Romanini, F. P. Mena , A. M. Baryshev, R. Hesper, W. Wild, "Measurement of in-RF and out-RF band saturation of SIS mixer," Proc. 18th International Symposium on Space Terahertz Technology (2007).

A. M. Baryshev, F. P. Mena, R. Hesper, T. Zijlstra, C. F. J. Lodewijk, W. Wild, T. M. Klapwijk, "A Waveguide NbTiN SIS Mixer for THz Array Applications", Proc. of the Joint 31st International Conference on Infrared and Millimeter Waves and 14th International Conference on Terahertz Electronics, 392 (2006).

C. F. J. Lodewijk, M. Kroug, T. M. Klapwijk, F. P. Mena, A. M. Baryshev and W. Wild, "Improved design for low noise Nb SIS devices for band 9 of ALMA", Proc. 16th International Symposium on Space Terahertz Technology (2005).

K. S. Burch, S.V. Dordevic, F. P. Mena, D. van der Marel, J. L. Sarrao, J. R. Jeffries, E.D. Bauer, M. B. Maple, y D. N. Basov, "Optical signatures of momentum-dependent hybridization of the local moments and conduction electrons in Kondo lattices", Physical Review B 75, 054523 (2007).

F.P. Mena, J.F. DiTusa, D. van der Marel, G. Aepli, D.P. Young, A. Damascelli, y J.A. Mydosh, "Suppressed reflectivity due to spin-controlled localization in a magnetic semiconductor", Physical Review B 73, 085205 (2006).

SYNERGISTIC ACTIVITIES

Involvement in the design, construction, test, and integration of several heterodyne receivers for sub-THz frequencies: a 600-720 GHz sideband-separating receiver and a double sideband receiver for band 9 of ALMA.

Setting up of the first mm and submm laboratory for astronomy in Chile. This laboratory includes micromachining and test capabilities.

Design, simulation, and development of sub-mm waveguide and quasioptical components: feedhorns, SIS mixers, IF and RF hybrids, othomode transducer, lenses.

Characterization of ALMA front ends.

COLLABORATORS

Andrei Barishev, Netherlands Institute for Space Research.

Victor Belitsky, Chalmers University of Technology.

Leonardo Bronfman, Universidad de Chile.

Urs Graf, Universitat zu Koeln.

Christopher Granet, BAE Systems.

Ronald Hesper, Netherlands Institute for Space Research.

Teun Klapwijk, Delft University of Technology.

Jacob Kooi, California Institute of Technology.

Ernest Michael, Universidad de Chile.

Nick Whyborn, Atacama Large Millimeter Array.

GRADUATE ADVISORS AND POSTDOCTORAL SPONSORS

Dirk van der Marel, University of Groningen, PhD Advisor.

Wolfgang Wild, European Southern Observatory, Postdoctoral Advisor.