

## Research:

### Journal Articles (ISI)

1. ALMA band 1 optics (35-50 GHz): Tolerance analysis, effect of cryostat infrared filters and cold beam measurements. A. Gonzalez, V. Tapia, R. Finger, Chi-Den Huang, S. Asayama, Y.-D. Huang. Journal of Infrared, Millimeter, and Terahertz Waves (submitted: 16 Apr **2017**)
2. The diffuse molecular component in the nuclear bulge of the Milky Way. D. Riquelme<sup>1</sup>, L. Bronfman, R. Mauersberger, R. Finger, C. Henkel, T.L. Wilson, and P. Cortés-Zuleta. Astronomy and Astrophysics, Accepted (AA/**2017**/30602)
3. SEDIGISM: Structure, excitation, and dynamics of the inner Galactic interstellar medium. F. Schuller, et. Al. 30 pages. Accepted for publication in A&A (AA/**2016**/28933)
4. High efficiency wideband refractive optics for ALMA Band-1 (35-52 GHz). Design, implementation and measurement results. V. Tapia, A. Gonzalez, R. Finger, F. P. Mena, D. Monasterio, N. Reyes, M. Sánchez, L. Bronfman. Accepted for publication in Journal of Infrared, Millimeter, and Terahertz Waves. (**2016**)
5. Large-scale CO (J = 4-3) mapping toward the Orion-A giant molecular cloud. Ishii, Shun; Seta, Masumichi; Nagai, Makoto; Miyamoto, Yusuke; Nakai, Naomasa; Nagasaki, Taketo; Arai, Hitoshi; Imada, Hiroaki; Miyagawa, Naoki; Maezawa, Hiroyuki; Maehashi, Hideki; Bronfman, Leonardo; Finger, Ricardo. Publications of the Astronomical Society of Japan, Volume 68, Issue 1, id.1013 pp. (**2016**)
6. Ultra-pure digital sideband separation at sub-millimeter Wavelengths. R. Finger, F. P. Mena, A. Baryshev, A. Khudchenko, R. Rodriguez, E. Huaracan, A. Alvear, J. Barkhof, R. Hesper, and L. Bronfman. Astronomy and Astrophysics, 584, A3 (**2015**) DOI: 10.1051/0004-6361/201526503
7. A Sideband-separating Receiver with a Calibrated Digital If-Hybrid Spectrometer for the Millimeter Band. R. Rodriguez, F. P. Mena, N. Reyes, E. Michael, R. Finger and L. Bronfman. Publications of the Astronomical Society of the Pacific, Vol. 126, pp. 380-385 (**2014**)
8. A calibrated digital sideband separating spectrometer for radio astronomy applications, R. Finger, P. Mena, N. Reyes, R. Rodriguez, L. Bronfman.

Publications of the Astronomical Society of the Pacific, Vol. 125, No. 925, pp. 263-269 (**2013**).

9. A Dual Ridge Broadband Orthomode Transducer for the 7-mm Band. Nicolas Reyes, Pablo Zorzi, Jose Pizarro, Ricardo Finger, F. Patricio Mena and Leonardo Bronfman, *Journal of Infrared, Millimeter and Terahertz Waves* DOI: 10.1007/s10762-012-9942-6 (**2012**)
10. Pattern Formation via Intermittence from Microscopic Deterministic Dynamics, M.Hernandez, D.Escaff and R.Finger, *PHYSICAL REVIEW E*, DOI: 10.1103/PhysRevE.85.056218 (**2012**)
11. Microwave Loss Reduction in Cryogenically Cooled Conductors: R. Finger and A.R. Kerr. *International Journal of Infrared Millimeter Waves* (**2008**) 29:924–932
12. Effect of Parasitic Capacitances on Impedance Measurements in Microsensors Structures: A Numerical Study. Nicolás H. Beltrán, Ricardo A. Finger, Jorge Santiago-Aviles, Patricio Espinoza-Vallejos. *SENSOR AND ACTUATORS B* 96 (**2003**) 139-143
13. Surface-Induced Resistivity of Thin Metallic Films Bounded By A Rough Fractal Surface. Raúl C. Munoz, Ricardo Finger, Claudio Arenas, Germán Kremer and Luis Moraga, *PHYSICAL REVIEW B* 66, 205401 (**2002**)

### **Conference Articles (proceedings)**

14. Performance of the First Three Preproduction 35-50 GHz Receiver Front-Ends for Atacama Large Millimeter / Submillimeter Array. European Microwave Association Congress EuMC/EuMIC. (**2017**)
15. Band-1 receiver front-end cartridges for Atacama Large Millimeter/submillimeter Array (ALMA): design and development toward production. SPIE Digital Library as part of the proceedings of the Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VII conference. <http://dx.doi.org/10.1117/12.2231547>. (**2016**)
16. FPGA-based digital signal processing for the next generation radio astronomy instruments: ultra-pure sideband separation and polarization detection. SPIE Digital Library as part of the proceedings of the Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VII conference. <http://dx.doi.org/10.1117/12.2233090>. (**2016**)
17. Omnidirectional bond-wire array antenna for 60 GHz wireless communication. R.V.Kemenade, C.Jarufe and R.Finger, A.B.Smolders and L.Bronfman. European

Microwave Conference (EuMC). IEEE Xplore, ISBN: 978-2-8748-7039-2. DOI: 10.1109/EuMC.2015.7345828. **(2015)**

18. The LLAMA 12 m mm/sub-mm radiotelescope in the Andes. Lepine, Jacques; Edemundo Arnal, Marcelo; de Graauw, Thijs; Abraham, Zulema; Gimenez de Castro, Guillermo; de Gouveia Dal Pino, Elisabete; Morras, Ricardo; Larrarte, Juan; Viramontes, José; Finger, Ricardo; Kooi, Jacob; Reeves, Rodrigo; Beaklini, Pedro. IAU General Assembly, Meeting #29, id.2247050 **(2015)**
19. Development of band-1 receiver cartridge for Atacama Large Millimeter/submillimeter Array (ALMA). Hwang, Yuh-Jing; Chiong, Chau-Ching; Huang, Ted; Kuo, Yue-Fang; Lin, Chi-Chang; Ho, Chin-Ting; Chuang, Hedy; Pospieszalski, Marian; Henke, Doug; Claude, Stephane; Reyes, Nicolas; Finger, Ricardo. Proceedings of the SPIE, Volume 9153, id. 91532H 14 pp. **(2014)**
20. A digital sideband-separating receiver for the millimeter band. Rodríguez, R.; Finger, R.; Mena, F. P.; Bronfman, Leonardo; Michael, Ernest A. Proceedings of the SPIE, Volume 9153, id. 91532E 5 pp. **(2014)**
21. The infrared K-band identification of the DSO/G2 source from VLT and Keck data Eckart, A.; Horrobin, M.; Britzen, S.; Zamaninasab, M.; Mužić, K.; Sabha, N.; Shahzamanian, B.; Yazici, S.; Moser, L.; García-Marin, M.; Valencia-S., M.; Borkar, A.; Bursa, M.; Karssen, G.; Karas, V.; Zajaček, M.; Bronfman, L.; Finger, R.; Jalali, B.; Vitale, M.; Rauch, C.; Kunneriath, D.; Moulataka, J.; Straubmeier, C.; Rashed, Y. E.; Markakis, K.; Zensus, A. Proceedings of the International Astronomical Union, Volume 303, pp. 269-273 **(2014)**
22. Sgr A West in the light of molecules: cold and dense gas east of the circumnuclear disk. Moser, Lydia; Eckart, A.; Borkar, A.; García-Marin, M.; Kunneriath, D.; Jalali, B.; Sabha, N.; Shahzamanian, B.; Valencia-S., M.; Zamaninasab, M.; Bronfman, L.; Finger, R. Proceedings of the International Astronomical Union, Volume 303, pp. 86-88. **(2014)**
23. A calibrated digital sideband separating spectrometer for radio astronomy applications, R. Finger, P. Mena, N. Reyes, R. Rodriguez, L. Bronfman. The 24th International Symposium on Space Terahertz Technology, ISSTT, Groningen, the Netherlands, **(2013)**.
24. New capabilities for the Southern 1.2-m mm-Wave Telescope. R. Rodriguez, R. Finger, P. Vasquez, R. Bustos, N. Reyes, P. Zorzi, L. Bronfman, F.P. Mena in Millimeter and Submillimeter Detectors and Instrumentation for Astronomy V, edited by Wayne S. Holland; Jonas Zmuidzinas, Amsterdam, July, **(2012)**.
25. ALMA band 1 development at Universidad de Chile. Reyes, Nicolas; Zorzi, Pablo; Jarufe, Claudio; Navarrete, Francisco; Colleoni, Franco; Pizarro, Jose; Finger,

Ricardo; Mena, Patricio; Bronfman, Leonardo. Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VI. Proceedings of the SPIE, Volume 8452, article id. 845220, 11 pp. (**2012**)

26. Integrated Setup for THz Receiver Characterization, O. Nyström, H. Rashid, B. Billade, E. Sundin, M. Fredrixson, G. Johnsen, I. Lapkin, D. Meledin, M. Strandberg, R. Finger, A. Pavolotsky, V. Desmaris, and V. Belitsky, 21ST INTERNATIONAL SYMPOSIUM ON SPACE TERAHERTZ TECHNOLOGY, OXFORD, 23-25 MARCH, (**2010**)

27. ALMA Band 5 Cartridge Performance. Billade, Bhushan; Lapkin, I.; Nystrom, O.; Sundin, E.; Fredrixon, M.; Finger, R.; Rashid, H.; Desmaris, V.; Meledin, D.; Pavolotsky, A.; Belitsky, Victor. Twenty-First International Symposium on Space Terahertz Technology, held March 23-25, 2010 at Oxford University's Said Business Center and the STFC Rutherford Appleton Laboratory, Oxford, UK. National Radio Astronomy Observatory (NRAO), (**2010**), p.137

28. Prototype ALMA Band 5 Cartridge: Design and Performance: V. Belitsky, I. Lapkin, B. Billade, E. Sundin, A. Pavolotsky, D. Meledin, V. Desmaris, M. Strandberg, R. Finger, O. Nyström, M. Fredrixon, S.-E. Ferm, H. Rashid, D. Henke. ISSTT (**2009**). ABSTRACT REFERENCE NUMBER 20, M1A.

## Patents

Circular Bond-Wire Array Antenna for 60 GHz indoor communications. Patent application (1187-2014).

Dispositivo de RadioVisión. Patent application (3302-2016).