

Jorge Andrés Villa-Vélez

PERSONAL DATA

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EDUCATION

- 2018-2021 Ph.D. candidate in ASTROPHYSICS and COSMOLOGY, **Aix-Marseille Université**, Marseille, France.
Thesis: "Spectro-photometric Analysis Around Cosmic Noon: Emission-Lines, Dust Attenuation, and Star Formation."
Supervisor: Dr. Véronique BUAT
- 2016-2018 Master of Science in ASTRONOMY, **Leiden University**, Leiden, The Netherlands.
Major Project - Thesis: "Searching for exoplanetary rings with *SWASP* and *Gaia*."
Supervisor: Dr. A.G.A. BROWN, Dr. M.A. (Matthew) KENWORTHY
- Minor Project:** "An ALMA survey of sub-millimetre galaxies in the extended chandra deep field south: A blind search for emission lines at 145 GHz."
Supervisor: Dr. Jacqueline A. HODGE
- 2009-2015 Bachelor of Science in ASTRONOMY, **University of Antioquia**, Medellín, Colombia.
Thesis: "Dark Matter Halo Characterization Through Properties Of Galaxies Classified In The Hubble Sequence."
Supervisor: Dr.rer.nat. Juan Carlos MUÑOZ-CUARTAS

PROFESSIONAL EXPERIENCE

INTERNSHIP - 2013 | UBVRI Photometry of Open Clusters (ESO 587-04, FSR 124 and SAI 135).
Photometric study performed in the *National Observatory of México, San Pedro Mártir*.
Supervisor: Raúl Michel Murillo
Place: UNAM, Ensenada, Baja California

OBSERVING EXPERIENCE

ALMA proposal - 2017 **Co-I:** ALMA Cycle 5 (ACA). **PI:** Gabriela Calistro Rivera (Leiden)
(Resubmitting) 2016.2.00209.S

Observing period - 2013 National Observatory of México, Ensenada, Baja California (UNAM)
Open clusters and cataclysmic variable stars observation.

Trainee - 2013 National Observatory of México, Tonantzintla (UNAM & INAOE)
Observing techniques and instrumentation.

TEACHING EXPERIENCE

Teaching Assistant - 2016 **Waves and Oscillations;** University of Antioquia.
Teacher - (2015-2016) **Observational Astronomy;** University of Antioquia.
Teaching Assistant - (2012-2014) **Astronomy for Youngsters;** University of Antioquia.

RESEARCH LINES & INTERESTS

Galactic & Extra-Galactic Astrophysics Star-forming galaxies, dust attenuation, spectroscopy, surveys (MOONS, FMOS), SED-fitting (CIGALE), HII-region modelling.

LANGUAGES

Spanish Mother tongue
English Fluent
French Fluent

PUBLICATIONS

- 2021 Fitting spectral energy distributions of FMOS-COSMOS emission-line galaxies at $z \sim 1.6$: Star formation rates, dust attenuation, and [OIII] $\lambda 5007$ emission-line luminosities, J. A. Villa-Vélez, Véronique Buat, Patrice Theulé, Médéric Boquien & Denis Burgarella, A&A accepted 2021
- 2020 A Virgo Environmental Survey Tracing Ionised Gas Emission. VESTIGE VIII. Bridging the cluster-ICM-galaxy evolution at small scales, A. Longobardi, A. Boselli, M. Fossati, J. A. Villa-Vélez, S. Bianchi, V. Casasola, E. Sarpa, F. Combes, G. Hensler⁸, D. Burgarella, C. Schimd, A. Nanni, P. Côté, V. Buat¹, P. Amram, L. Ferrarese, J. Braine, G. Trinchieri, S. Boissier, M. Boquien, P. Andreani, S. Gwyn, J. C. Cuillandre, A&A, 2020, Vol. 644, A161
- 2019 COSMOS/GOODS-S fields spectro-photometric analysis and the MOONS future perspectives in SED fitting studies, J. A. Villa-Vélez, V. Buat, D. Burgarella, M. Rodrigues, M. Puech, H. Flores, Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics, 2019, pp.115-119
- 2018 The Pre-main Sequence Population of Sco-Cen Unveiled with Gaia DR2, J.A. Villa Vélez, Brown A. G. A., and M. A. Kenworthy, RN ASS, 2018, Volume 2, Number 2

ACADEMIC RECOGNITION AND AWARDS

- Honors - (2009-2015) Best Astronomy term GPA. Best Astronomy advanced student.
Best physics department graduated GPA.
University of Antioquia (1.000€).
- Scholarships- (2015-2018) UdeA MSc/PhD Scholarship. University of Antioquia (7.000€, not taken).
Full Oort Scholarship, Leiden University (58.000€).

MEMBER OF COMMITTEES AND WORKING GROUPS

- (2021) Colombian Astronomy Student Network (RECA) - Student advisory program.
- (2020) Member of the LOC at "The Rise of Metals and Dust through Cosmic Time" conference.
- (2020-) Member of the NECO (International Research Network Extragalactic astrophysics and Cosmology) collaboration.
- (2019-) Member of the MOONS (Multi-Object Optical and Near-infrared Spectrograph) collaboration. TE-WG7 and TWG1. Physical parameters, redshifts and end-2-end simulation.
- (2019-2021) Member of the Seminar Committee. Aix-Marseille Université, LAM.
- (2017-2018) Member of the Education Committee Master Astronomy. Leiden University.
- (2012-2015) Computational Physics & Astrophysics (FACom). University of Antioquia.

COMPUTATIONAL SKILLS

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| Programming | Python, C (GSL), Mathematica, SQL, IDL, Bash.
Monte-Carlo, MCMC, scikit-learn (Machine Learning). |
| Operating Systems | Linux(Fedora, Ubuntu), Windows. |
| Data processing | CIGALE, CASA, Pyraf(IRAF), TOPCAT, DS9, Aladin, Vizier, Gnuplot. |
| Text editing | LATEX, (kate, geany, emacs), Microsoft Applications. |

SUMMER SCHOOLS, CONFERENCES & WORKSHOPS

- 2021 International summer school on the interstellar medium of galaxies, from the epoch of reionisation to the Milky Way; Summer school; France.
- 2021 Multi-Object Spectroscopy for Statistical Measures of Galaxy Evolution; Workshop; STScI, United States. (Poster)
- 2020 The Rise of Dust and Metals in Galaxies through Cosmic Time; Marseille, France. (Participant/LOC)
- 2020 EAS Annual Meeting; Leiden, The Netherlands. (Poster/speed-talk)
- 2019 The Art of Measuring Galaxy Physical Properties; Milan, Italy. (Poster)
- 2019 Société Française d'Astronomie & d'Astrophysique (SF2A); Nice, France. (Oral presentation)
- 2014 IV Colombian Meeting of Astronomy & Astrophysics (COCOA); Pasto, Colombia. (Oral presentation)
- 2013 XII Meeting for Science & Mathematics Teaching; Medellín, Colombia.
- 2013 XXII Summer in the Observatory; Ensenada, México.
- 2013 Observational Astronomy School for Latin American Students (ESAOBELA); Puebla, México.
- 2012 II International Astrobiology Meeting; Medellín, Colombia.
- 2011 Magnetic-Related Phenomena in the Outer Atmosphere of Cool Stars; Medellín, Colombia.
- 2011 Modern Topics in Fourier Optics; Medellín, Colombia.
- 2011 IV Colombian Meeting of Astronomy & Astrophysics (COCOA); Bogotá, Colombia.

SELECTED TALKS

- 2021 LGBTQ+ STEM Seminar; Capítulo de Óptica UNAL (online via Universidad Nacional de Colombia, Medellín, Colombia).
- 2021 Research Seminar; Astronomía-UdeA Orígenes (online via Universidad de Antioquia, Colombia).
- 2020 Meeting Conference; e-ESAOBELA (online via OAN - Tonantzintla, Mexico).
- 2019 Meeting Conference; Milan, Italy.
- 2015 Research Seminar; Leiden University, Leiden, the Netherlands.
- 2015 Research Seminar; University of Antioquia, Medellín, Colombia.
- 2014 Meeting Conference; University of Nariño, Pasto, Colombia.
- 2013 International Research Presentation; Medellín, Colombia.
- 2013 Summer School Seminar; Ensenada, México.

COMPLEMENTARY EDUCATION

- 2016 Radioastronomy with ALMA (AstroTwinCoLo)
Introduction to Astrochemistry (AstroTwinCoLo)
- 2015 Computational Astrophysics (AstroTwinCoLo)
Galaxies Formation (AstroTwinCoLo)
- 2013 Astronomical Observing Techniques (AstroTwinCoLo)
Radiative Processes in Astrophysics (AstroTwinCoLo)
- 2010 Cosmology, University of Antioquia.
- 2010 Planetary Sciences, University of Antioquia.
- 2009 Astrophysics Foundations, University of Antioquia.

HOBBIES(PERSONAL INTERESTS)

- Sports** Swimming, Hiking, Biking
- Hobbies** Photography, Sightseeing, Collecting rocks, stones and coins, Museums & Art, Classical Music & Opera, Telescope observation.