

Recommendation Letter

4 January, 2021

To whom it may concern,

I am writing in support of Dr. Javier Peralta application for the "2021 Competitive Examinations for Researcher Positions". I have known Javier for more than ten years. He is a close collaborator to our group in Planetary System's Atmospheres. He was till recently a Science team member from Akatsuki Venus orbiter at JAXA, Japan.

Javier Peralta studies waves and cloud dynamics in Venus' atmosphere. He has experience in analysis of Venus Express data and Akatsuki mission, where he worked under an International Top Young Fellowship.

Among his accomplishments, the improvement of the software PLIA to navigate and process planetary data, the measurement and analysis of the winds at different altitudes of the cloud region in Venus using remote sensing images, the study of the atmospheric turbulence at the cloud tops of Venus, and the detection and characterization of mesoscale waves at different altitudes of the cloud region.

In the field of the atmospheric dynamics, Javier Peralta has worked in a wide variety of topics, from the measurement of atmospheric winds and their variability, to the characterization of the turbulence and the wave activity that manifests on the clouds' albedo and opacity, as well as on the winds and temperatures. He also deduced -for the first time- the analytical solutions for the waves in planets with atmospheric superrotation (cyclotrophic regimes), and successfully applied this theory to the equatorial region of Venus in order to obtain a Kelvin-type wave which satisfactorily explains the Y-feature of Venus. In addition to the atmospheric dynamics, he collaborated in other works closer to the field of atmospheric radiation, mainly the non-LTE infrared emissions from the upper atmospheres of the Earth and Venus, as well as the drastic electronic changes apparent in the ionosphere of Mars, or the simultaneous measurement of winds via cloud tracking and the Doppler shift in the solar Fraunhofer lines from the cloud tops of Venus.

Javier Peralta also has experience working with remote sensing data from cameras (Galileo/SSI, VEx/VMC), spectrometers (VEx/VIRTIS-H, VEx/SOIR) and visual spectrometers (VEx/VIRTIS-M), as well as designing software to manage huge amounts of data and process them. Moreover, he acquired experience with NAIF navigation routines for SPICE kernels, and has a long-experience background in programming with IDL.

He is one of those rare people who works very hard and diligently, always available to help the colleagues and eager to learn more and move towards new challenges. I do recommend Javier Peralta, as much as a quality and interested researcher, as much as a person of integrity.

The research he carried out with a high level of motivation and enthusiasm, and with excellent communication skills. For these reasons, I believe that Javier Peralta is an ideal candidate for the position related with the application: STANDARD GRADE RESEARCHER (CR). He has demonstrated that he is a bright scientist, competent, enthusiastic, with excellent interactions with his colleagues. I strongly support his application

Pedro Mota Machado



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