World Academy of Science, Engineering and Technology
International Journal of Physical and Mathematical Sciences
Vol:16, No:11, 2022

Machine Learning for Exoplanetary Habitability Assessment

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Abstract : The synergy of machine learning and astronomical technology advancement is giving rise to the new space age, which is pronounced by better habitability assessments. To initiate this discussion, it should be recorded for definition purposes that the symbiotic relationship between astronomy and improved computing has been code-named the Cis-Astro gateway concept. The cosmological fate of this phrase has been unashamedly plagiarized from the cis-lunar gateway template and its associated LaGrange points which act as an orbital bridge to the moon from our planet Earth. However, for this study, the scientific audience is invited to bridge toward the discovery of new habitable planets. It is imperative to state that cosmic probes of this magnitude can be utilized as the starting nodes of the astrobiological search for galactic life. This research can also assist by acting as the navigation system for future space telescope launches through the delimitation of target exoplanets. The findings and the associated platforms can be harnessed as building blocks for the modeling of climate change on planet earth. The notion that if the human genus exhausts the resources of the planet earth or there is a bug of some sort that makes the earth inhabitable for humans explains the need to find an alternative planet to inhabit. The scientific community, through interdisciplinary discussions of the International Astronautical Federation so far has the common position that engineers can reduce space mission costs by constructing a stable cis-lunar orbit infrastructure for refilling and carrying out other associated in-orbit servicing activities. Similarly, the Cis-Astro gateway can be envisaged as a budget optimization technique that models extra-solar bodies and can facilitate the scoping of future mission rendezvous. It should be registered as well that this broad and voluminous catalog of exoplanets shall be narrowed along the way using machine learning filters. The gist of this topic revolves around the indirect economic rationale of establishing a habitability scoping platform.

Keywords : machine-learning, habitability, exoplanets, supercomputing
Conference Title : ICCA 2022 : International Conference on Cosmology and Astronomy
Conference Location : San Francisco, United States
Conference Dates : November 03-04, 2022