



CONCORSO N. TD/AC/T3/27601 PER TITOLI ED ESAMI PER L'ASSUNZIONE DI UNA UNITÀ DI PERSONALE CON CONTRATTO DI LAVORO A TEMPO DETERMINATO, CON PROFILO DI TECNOLOGO DI III LIVELLO PROFESSIONALE.

PROVA ORALE

5 settembre 2025

Prova n. 1

- 1) Esempio/i di gestione di vendite e documentazione associata
- 2) Esempio/i di gestione logistica per la pianificazione di eventi
- 3) Vantaggi e svantaggi di brevettare un'invenzione
- 4) Descrivere in quali ambiti vengono utilizzati i protocolli SSH, FTP, HTTP e IMAP evidenziandone le principali differenze d'uso.
- 5) Properties of Solar Wind Structures at Mercury's Orbit

Abstract - Mercury's environment is characterized by a high variability and strength of the solar forcing.

Its magnetosphere is completely reconfigured even for small changes in the interplanetary magnetic field and the solar wind (SW) dynamic pressure. Different configurations are due to occurrence of different structures in the SW.

Among them, high speed streams from coronal holes, magnetic clouds, and noncompressive density enhancement have been analyzed to better characterize the Hermean conditions, which might be expected during the ongoing BepiColombo mission. Helios 1 and 2 mission data collected between 0.29 and 0.47 AU have been used to perform a statistical analysis of these SW structures.

The numerical results reported in the paper, as well as the probability densities displayed in the maps, give more precise indications when associated to a rigorous SW structures selection. The occurrence rate along solar cycle together with the average features of each class of SW structures are useful information for Space Weather topics. Results from the same analysis performed at 1 AU have been used to further verification of the radial behavior of the SW parameters.

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Prova n. 2

- 1) Esempio/i di gestione di servizi e documentazione associata
- 2) Esempio/i di gestione e configurazione di software di programmazione e pianificazione
- 3) Esponga una o più modalità di sfruttamento commerciale dei risultati della ricerca
- 4) Immaginando di dover fare tre attività diverse:
 - a) analizzare dati statistici,
 - b) simulare un modello matematico,
 - c) creare un programma generale per automatizzare dei calcoli.Tra Python, R e MATLAB, quale linguaggio sarebbe più adatto in ciascun caso? E perché?
- 5) Geomagnetic activity recurrences for predicting the amplitude and shape of solar cycle n. 25

Abstract – Predicting solar activity is one of the most challenging topics among the various Space Weather and Space Climate issues. In the last decades, the constant enhancement of Space Climate data improved the comprehension of the related physical phenomena and the statistical bases for prediction algorithms. For this purpose, we used geomagnetic indices to provide a powerful algorithm (see Diego et al. [2010. J Geophys Res 115: A06103]) for the solar activity prediction, based on evaluating the recurrence rate in the geomagnetic activity. This paper aims to present the validation of our algorithm over solar cycle n. 24, for which a successful prediction was made, and upgrade it to forecast the shape and time as well as the amplitude of the upcoming cycle n. 25. Contrary to the consensus, we predict it to be quite high, with a maximum sunspot number of 205 ± 29 , which should be reached in the first half of 2023. This prediction is consistent with the scenario in which the long-term Gleissberg cycle has reached its minimum in cycle n. 24, and the rising phase is beginning.

