

Research on spatial prediction of gravity solar container field

<div class="df_qntext">How can gravity field models preserve original signals while minimizing random errors?

In order to achieve gravity field models that preserve the original signals while minimizing random errors, we combine various TVGFMs using different weighting schemes. To assess whether the combination results meet our expectations, it is essential to conduct validations to evaluate the performance of the individual and combined models.

<div class="df_qntext">Why does the DNN gravity field model have poor prediction results?

Due to the limited spatial distribution of the training dataset, the trained DNN gravity field model has poor prediction results of the gravity field outside the probe's flight orbit, such as the area near the landing trajectory of the probe's descent stage.

<div class="df_qntext">Why is time-variable Earth's gravity field important?

Accurate time-variable Earth's gravity field information is important for precise orbit determination (POD) of low Earth orbiters (LEO). In particular the POD of altimeter satellites benefits from accurate modelling of the time-variable gravity field.

<div class="df_qntext">How important is a time-variable gravity field model?

Moreover, the precise GRACE/GRACE-FO time-variable gravity field model (TVGFM) is invaluable for enhancing the orbit determination of low-orbit satellites, underscoring the importance of refining existing TVGFMs [17].

<div class="df_qntext">Which gravity field model should be used to determine pod of LEO satellites?

Consequently, POD of LEO satellites requires a gravity field model with a higher spherical harmonic resolution than POD of satellites orbiting the Earth at higher altitudes. Global gravity field models are commonly determined from the analysis of satellite orbits.

<div class="df_qntext">What is cost-G - time-variable gravity field?

In particular the POD of altimeter satellites benefits from accurate modelling of the time-variable gravity field. The Combination Service for Time-variable Gravity Fields (COST-G) provides monthly gravity fields based on a combination of GRACE/GRACE-FO derived monthly gravity field solutions from different analysis centers.

This research investigates the determinants of ship turnaround times at about 2,300 container ports between 1977 and 2016, based on nearly 3 million daily vessel movements. It adopts ...

With an equivalent observable signal in the range of $30 \times 10^{-8} \text{ m/s}^2$ to $40 \times 10^{-8} \text{ m/s}^2$, the

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spatial resolution of the gravity network's field source is estimated to be approximately 55 km. ...

This paper will focus on the research and development of a new surface gravity prediction tool and methodology. NGS has upwards of 10 million terrestrial gravity observations and 100 million GRAV-D ...

This study aims to predict spatial variation of soil depth in a large and complex area with a limited number of sparse samples, estimate local predictive uncertainty, and investigate the impacts ...

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This study evaluates the impact of single and double deployable solar panels on gravity field recovery (GFR) through closed-loop simulations. Five GRACE-like satellite configurations were ...

f the gravity field products is one arc-minute. Therefore, one arc-minute images are constructed at locations of ship cru mic operation of energy storage i The prediction for geothermal energy was ...

Yet, there has been limited exploration into crucial features and model accuracy for different spatial scales. This study addresses this gap by employing taxi trajectories in Beijing and leveraging the ...

Here, we review the statistical, physical and artificial intelligence (AI) methods, data and model uncertainties, predictability and future directions for STF problems. Statistical STF methods ...

<p>Gravity field is the most basic physical field generated by the material properties of the Earth system. It reflects the spatial distribution, movement and change of materials determined by the interaction ...

With the development of deep learning techniques, these methods have emerged as mainstream approaches in spatiotemporal prediction due to their robust nonlinear modeling capabilities [10]. ...

To tackle this gap, we propose an advanced methodological framework to reconstruct a spatio-temporal field on a regular grid using spatially irregularly distributed time series data. The spatio ...

To this end, this paper provides a systematic review of different spatial prediction methods. We categorize methods based on the unique challenges they address, discuss their underlying ...

This research focuses on the problem how to leverage the correlations between spatial and temporal weather data to predict solar irradiation. As a result, the collected data has two parts: a network that ...

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This Special Issue titled "Machine Learning Modeling for Spatial-Temporal Prediction of Geohazard" comprises eleven high-quality papers, including one systematic review article and ten original ...

We also discuss spatiotemporal extensions of methods. Our goal is to help interdisciplinary domain scientists choose techniques to solve their problems, and more importantly, ...

Gravity center model Gravity center that derived from the field of physics refers to the point at which the gravity force is exerted equally on each part of an object. Moreover, in the field of ...

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