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## **Space Geodetic investigation of temporal mass variations within the Earth's system**

The Earth system is composed of the atmosphere, hydrosphere, geosphere, and biosphere. The mass of the Earth system remains constant, however, there is a redistribution of mass between the compartments. This mass redistribution gets perturbed by the variations in the precipitations induced by climate change. The surface of the Earth responds elastically to these mass variations and it can be detected by space geodetic techniques like Global Navigational Satellite Systems (GNSS) and Gravity Recovery and Climate Experiment (GRACE)/GRACE-Follow On (FO).

In this study, the deformations of the Earth's surface caused by temporal mass variations have been investigated. The area of Northern India has been considered for this particular investigation.

The results are analyzed and discussed.

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