at a place where the actual depth is between 14 and 50 m. Manifestations of CR_2 are absent in this map and WT_2 is not traceable. Whether the plateau reflects any buried mass is not known. Such marked discrepancies were also observed while comparing the profiles drawn from the inner-shelf to the western slope across the Lakshadweep Ridge (S. V. Hegde, pers. commun.). Since these two areas fall on the continental crust, our apprehension is about the algorithm used to convert the gravity data obtained over the continental crust and oceanic crust. Hence, care must be taken while using altimetry data of near-shore areas. A detailed paper on this will be presented at the National Seminar on Quaternary Climatic Changes and Landforms in Tirunelveli.

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Response:

We thank Dinesh *et al.* for appreciating the satellite altimetry-related bathymetry prediction activity as a fast and effective method. We have tested the model in a deeper ocean near the Andaman offshore and received appreciably satisfactory results. The known ship-borne bathymetry technique is old, requires a number of corrections and is highly time-consuming. Even today, a huge area in the Indian offshore remains unexplored by ship-borne bathymetry. In this respect, satellite altimetry delivers a fast and comparatively accurate method for prediction/delineation of bathymetry, particularly over the deeper oceans.

For generation of gravity using altimeter data, one has to first generate the marine geoid (the hypothetical surface nearest to the sea surface, free of any external disturbances, e.g. tides, sea-surface winds, ocean gyres/eddies, etc.) from sea surface heights. The same can be converted to free-air gravity using a simple formulation as given by Chapman[1]. The detailed method gets complicated due to a number of corrections, and other necessary parameter estimations. Geoid undulation (geoid height with respect to the reference ellipsoid) is used as one of the parameters for bathymetry estimation using the concept that the changes in the geoid (static component) are caused by bathymetry anomaly in this region.

We are also pleased to note that a ship-borne bathymetry map was prepared to compare the sea-floor morphology with that of the bathymetric data derived by satellite altimetry within the territorial waters off Tuticorin in the Gulf of Mannar. Now coming to the intricate details that are expected in the case of a few near-shore anomalies, it would have been better if they had given the profiles with the bathymetry anomaly plotted. However, one point here is important in that the prediction of bathymetry becomes invalid in the near-shore region due to the signal processing limitations. By Nyquist theorem, two samples per cycle will completely define a band-limited signal or the sampling rate must be twice the highest frequency component of the signal (Shannon's sampling theorem). So, if the area falls within the limit of two sampling intervals (~30 km), in the present case data resolution ~15 km, it will not be possible to predict the bathymetry. With higher resolution datasets (currently ~3.5 km), this problem will be limited to within 7 km near the coast. However, the technique is valid in the deeper oceans. Details of intricate sea-floor morphology, particularly coral ridge, etc. should get reflected in the predicted bathymetry profiles, provided they are in deeper oceans and sufficiently large in extent.

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Is phytoremediation the solution for arsenic contamination of groundwater in India and Bangladesh?

Groundwater which is not present in abundance in nature is one of the most important sources of drinking water. The contamination of groundwater with arsenic is a serious problem encountered in northern India and Bangladesh[1]. To understand the magnitude of the arsenic calamity in West Bengal, a detailed study spanning seven years was made in North 24-Parganas, one of the nine arsenic-affected districts[2]. Area and population of North 24-Parganas district are 4093.82 km^2 and 7.3 million, respectively. Nearly forty eight thousand water samples were analysed from hand tube wells of North 24-Parganas which are in use for drinking. 29.2% of the tube wells were found to have arsenic above 50 μg/l, which is beyond the maximum permissible limit of World Health Organization (WHO) while 52.8% had arsenic above 10 μg/l, which is slightly above the WHO recommended value of arsenic in drinking water. Out of the 22 blocks of North 24-Parganas, arsenic has been found in 20 blocks above the maximum permissible limit and so far in 16 blocks people have been identified as suffering from arsenical skin lesions. From the data, it is estimated that about 2.0 million and 1.0 million people are drinking arsenic contaminated water above 10 μg/l and 50 μg/l level, respectively in North 24-Parganas