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Physical Retracking of Jason-1 LRM data for ocean surface height/gravity field determination

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Jason-1 Low Resolution Mode (LRM) waveforms can be processed to extract accurate heights of the ocean surface. These heights are adjusted taking into account various corrections available. Further the along surface slope/variation of these ocean heights can be used to make an estimation of the gravity field. An important part of this gravity field estimation is dependent on the way the LRM waveform is processed. Thus a physical model based on an error function is used, and the LRM waveforms are fit to this model. A processing system made up of 2 parameter and 3 parameter fitting models are used in order to extract the most reliable ocean surface heights. The quality of the processing system is judged by evaluating the standard deviation of the sea surface anomaly obtained after all corrections and the mean sea surface/geoid are removed. The lower the value of the standard deviation of the sea surface anomaly, the better the quality of processing is. Hence, different processing schemes are considered and evaluated in order to conclude towards the best retracking procedure which would eventually result in high accuracy gravity field estimations.