USE OF ADAPTIVE FILTERS FOR RETRIEVING GRAVITY WAVES FROM RADIO-OCCULTATION DATA

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Radio-occultation data allows studying the vertical pattern of gravity waves. That is usually made by separating the base state atmosphere from the high frequency activity by means a high-pass filter. What the base state atmosphere is it is a matter of controversial as the atmosphere never is in its so called base state. Hence a specific filter assumes a base state independently from the real configuration of the atmosphere. The base state would be changing from time to time and so adaptive filters should be used to define the base state. It is suggested here the use of adaptive filters to separate the base state from the atmospheric perturbations and study gravity waves. In particular, we will show that polynomial adaptive filters separate very well the gravity wave activity from the base state atmosphere. Results are in accord to ones found by some researches; the gravity wave wavelength is about 2000 m. Thus, they do not confirm outcomes of other researches claiming the observation of gravity waves with smaller wavelength.