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High accuracy analysis of whistlers measured on ground stations and LEO (Demeter and Compass) satellites

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An effective wave-analyzing method based of matched filtering has been previously developed to obtain the frequency-time-amplitude pattern of the whistlers with high accuracy. The accuracy and the resolution of the closely spaced traces can be further increased with the estimation of the filter output parameters. VLF broadband data recording have been conducted on board of LEO satellites (Demeter, Compass-SAS2) and simultaneously on ground stations (Tihany, Nagycenk in Hungary). Whistlers were selected and analyzed. The obtained fine structure of whistlers enable us to identify the traces with identical propagating conditions. Whistlers were selected and analyzed also from synchronic data set to examine the effect of the ionosphere.