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Detection of short period ionosphere variations by VLBI

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The usage of fringe phase information from VLBI measurements is a new and challenging field of research, which can be applied for the detection of short period variations (scintillations) of the ionosphere. A method for the extraction of such disturbances is presented and it is discussed how dispersive influences can be separated from intra-scan delay variations. Requisites and limitations are discussed and it is shown by an example that short period ionosphere variations can be detected very precisely, if the signal to noise ratio of the VLBI data is high enough. A possible physical origin of the disturbance is discussed and the implications on ionospheric research are shown. The results obtained from VLBI are validated against GPS measurements to verify the outcomes.