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Goniopolarimetric inversion for an extended source: application to type III radio bursts

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Type III radio bursts are among the most intense electromagnetic emissions in the solar wind. Accelerated electrons streaming outward from the Sun on open field lines generate the type III radio bursts. The type III radio bursts have an extended source. We thus present several possible methods for the goniopolarimetry inversion for this case. We have implemented a standard non-linear chi2 method (Levenberg-Marquardt, a gradient-expansion). We have also combined it with a method based on singular value decomposition of the electric spectral matrices. We compare the results with the common plane-wave methods for estimation of goniopolarimetry properties. These techniques will be used to process the data of the S/WAVES instrument onboard both of the STEREO spacecraft.