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Hard- and software tools for the education of Geodetic VLBI

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Content :

Onsala Space Observatory hosts two 2.3 m radio telescopes called SALSAs ("Such a lovely small antenna") which are utilised to bring front-line interactive astronomy to the classroom. Until now SALSAs has been used for astronomical educational purposes solely, in particular demonstrating the concept of single dish measurements. However, it is possible to combine both SALSAs to an interferometer by making use of hardware which has been developed for software-defined radio. In doing so, one can utilise the SALSAs antenna pair as a student demonstrator for geodetic Very Long Baseline Interferometry. We will discuss the COTS hardware components that are necessary to turn the SALSAs installation into an interferometer. Moreover, we will show how a simple correlator has been used to detect fringes and provide single-band delays. Such delays were then processed with our analysis software c5++. We are going to discuss how it is possible to mimic the complete processing chain of geodetic VLBI and how this can be used for training of students and other interested parties.

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