

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

MM-VLBI MEMO #009

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15 November 1993

NOV 16 1993

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To: Millimeter-wave VLBI Group  
From: Alan E.E. Rogers *A.E.R.*  
Subject: Total phase observable and FRINGEX

I have long been an advocate of total observed quantities that are independent of correlation aprioris. I would like to encourage the use of the earth centered total phase with a reference epoch close to the center of the scan or data segment and reference frequency equal to the mean of all frequencies in the bandwidth synthesis sequence. This phase is available using the -m option in FRINGEX (the Unix version of FRNGX with Roger Cappallo's delay subroutine - C-version of VDELY). This observable is very insensitive to both COREL aprioris and the FRNGE (or FOURFIT) residuals and allows the calculation of closure phases without the need of any re-fringing with globally estimated zero-width windows on baselines for which fringes are detected. With this observable COREL + FRNGE basically act only as a filter. While this has been pointed out before, I wish to again encourage the use of total earth centered quantities for closure phase calculations.