



Improved VLBI station position and EOP estimates by accounting for station dependent noise

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A fundamental assumption of most VLBI data processing is that all observations within a scan are independent. This assumption is incorrect. I demonstrate that there is station dependent noise which can be modeled by including correlations between observations involving a common station at a given time. Including this correlation has several consequences: 1.) The formal errors of the VLBI parameter estimates are increased, and become closer to the observed scatter. 2.) Baseline scatter of VLBI solutions is reduced, indicating that the solutions are internally more consistent. 3.) The agreement between VLBI and GPS estimates of Polar Motion is improved, indicating that the estimates are better.