

Abstract Submitted  
for the NWS08 Meeting of  
The American Physical Society

**Time-Correlated Structure in Pulsar Spin Fluctuations** STEVEN PRICE, BENNETT LINK, Montana State University, STEVE SHORE — I will present evidence for time-correlated structure in the pulsar spin-rate fluctuations known as timing noise. Such evidence has not been found in previous studies of timing noise power spectra, which have revealed no sign of deviations from rigid body rotation. We use two statistics to measure correlations in the time domain: the auto-correlation function and the lagged distribution function. This analysis indicates that pulse arrival time fluctuations are correlated over a correlation time of  $\sim 10$  days, beyond which no correlation is observed. We interpret this to be the signature of a damped rotational mode in the star, arising from frictional coupling of the solid crust and liquid interior.

Steven Price  
Montana State University

Date submitted: 18 Apr 2008

Electronic form version 1.4