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Abstract:

Pulsars are peculiar objects. Some suddenly switch into another emission state for minutes, or even days to years. We do not know why and we do not know why only some pulsars do this. Pulsar state switching behaviors include nulling, busrsting, mode changing and long-term intermittency etc. It is believed that all these phenomena are linked and caused by changes in the pulsar's magnetosphere. The purpose of this proposal is to monitor a sample of state switching pulsars that to determine what makes these particular pulsars special. The FAST telescope will provides unprecedented sensitivity and will allow us to study the emission of the state switching pulsars in great detail. These observations will provide insights into how these pulsars emit and how that emission is changing in time and as a function of frequency. Various theoretical models now exist that attempt to predict the switch time scales etc. and we will use these observations to test those models.