

PID:PT2022_0165

Abstract:

Pulsar glitch is a discontinuous and abrupt change in rotation speed, characterized by a sudden increase in spin frequency, and is often followed by a recovery process. It is generally regarded as having an internal origin, caused either by crust quake or by a sudden transfer of angular momentum from the crustal superfluid to the rest of the star. For most glitch events, there are no radiative and pulse profile changes observed. Recent observations have revealed that some microphysical processes are connected with the glitch behavior. The crab pulsar is a young radio pulsar with a short period. It is reported that its polarization fraction at soft X-ray decreased after the glitch on 23 July 2019. The Crab pulsar has been regular monitored with the 76-m Lovell telescope and Nanshan 25-m radio telescope. Though glitch events happen unpredictably, large glitches could be detected immediately. We apply for FAST observations to study the polarization properties of the Crab pulsar before and after the glitch behavior, to study the microphysical processes triggered by a glitch event.