Proposal Abstract:

The physical properties of the stellar surfaces are difficult to probe due to the absence of direct observation. Studying the physics of the surfaces of the pulsars would provide insight into understanding the pulsar electrodynamics. The behavior of magnetosphere radiation and emission features of pulsars are closely relevant to the stellar surface. Moreover, the property of the inner structure of the pulsar is also leaked by the physics of the stellar surface. Therefore, understanding these issues closely relevant to the radiation mechanism of the pulsar requires studying the stellar surface. Millisecond pulsars have lower radiation altitudes than normal pulsars, the radiation behavior of the lower emission altitude is usually considered to be contributed by the multi-pole magnetic field rather than the dipole magnetic field. Moreover, the light cylinder of the millisecond pulsar is usually small due to a fast spin period. These magnetosphere structures are good for probing the physical properties of the surface of the millisecond pulsar.