

Disentangling the complex emission patterns in radio pulsars

Abstract

We propose to investigate in depth the single-pulse patterns of 19 pulsars carefully selected from the recently published catalogue of 1198 pulsars in the southern sky (as part of the Thousand Pulsar Array project within the MeerTime large survey project). Their patterns are highly complex, and often incompatible with expectations from existing models. Here four distinct sub-projects are proposed, with the overarching goal to shed light on the dynamical processes operating in pulsar magnetospheres.