

# A numerical method to constrain multiband emission regions of pulsars

Wang, H. G.<sup>1</sup>, Qiao, G. J.<sup>2</sup>, Xu, R. X.<sup>2</sup>

<sup>1</sup> AA(Center for Astrophysics, Guangzhou University, Guangzhou 510400, China)

<sup>2</sup>AB(Department of Astronomy, Peking University, Beijing 100871, China)

<sup>2</sup>AC(Department of Astronomy, Peking University, Beijing 100871, China)

**ABSTRACT:** A numerical method is developed to constrain the 3-D structure of emission regions of pulsars. In this method a rotational magnetic field is assumed, retardation and aberration effects are involved. The emission points are constrained by reproducing some observed features, e.g. radio average profiles and high light curves, radio polarization. The application to gamma-ray pulsars is presented here. We hope it could be used as a platform to obtain more detailed information about emission regions so as to benefit the studies on many issues on pulsar emission.