



Obtaining the alpha angle for pulsars with known braking index

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Pulsars are important astrophysical object described by rotating spherical magnetized. Even pulsars being the target of many investigations, we still do not know very well which physical conditions lead to braking index smaller than 3. Moreover, it is known that the angle between the magnetic moment and rotation axis is the responsible by irradiation of its rotational energy and that can be varying with time, as in the case of the pulsar in the Crab Nebula. We propose a uniform variation in the radius of the star and in the angle of inclination of the magnetic dipole, as a way of explaining the different values for the braking index equal to 3 (canonical index). We assume the existence of variation in the moment of inertia, as well as the premise that as in the Crab's pulsar the angle of inclination of the magnetic dipole may be varying for the other pulsars. As results we obtain the variation of the centrifugal force and the alpha angle between the magnetic dipole vector and the axis of rotation for our sample of pulsars.