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The influence of deceleration in the bracking index of Pulsars

Pulsars are stars from which electromagnetic radiation is observed to pulsate in well-defined time intervals as the star rotates and the emission of eletromagnetic signal is located in a place different from the rotation center. The frequencies of the pulses decay with time, quantified by the braking index (n). In the canonical model n= 3, in general, for all pulsars, but observational data shows that n is lower than 3. In this work this model is modified, based on modification of the canonical one incorporating the influence of the deceleration of the neuton star as it looses energy by emmiting electromagnetic radiation and decelerates, as it decelerates, the shape of the star changes because of the smaller centrifugal force decreasing its inertia moment, what in normal conditions would accelerate the star rotation, as it decreses because of loss in energy, the star would decelerate less making the bracking index smaller than three. The model really decreases the bracking index but not at a factor needed to explain the experimental data. Only the bracking index close to three can be described by this model. The authors believe that the complete explanation for to bracking index is due to a series of fenomena incorporated in the process.

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