

ON THE EVOLUTION OF MAGNETIC INCLINATION WITH AGE

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ABSTRACT. In this paper, the author studied the evolution of magnetic inclination with age for several pulsars. According to the results obtained by the author (1981), the formula for this evolution is given below

$$\sin \alpha = \sin \alpha_0 \exp \left[- \left(1 - e^{-\xi t} \right) \frac{\dot{P}_0}{\xi P_0} \cot^2 \alpha_0 \right]$$

The evolutionary curves of magnetic inclination, calculated from this formula, for three pulsars — PSR 0525+21, PSR 0329+54 and PSR 1133+16 — are presented in Fig. 1.

It can be seen that the magnetic inclination for these three pulsars are all gradually decreasing with time. The older the pulsar is, the smaller the magnetic inclination will be.

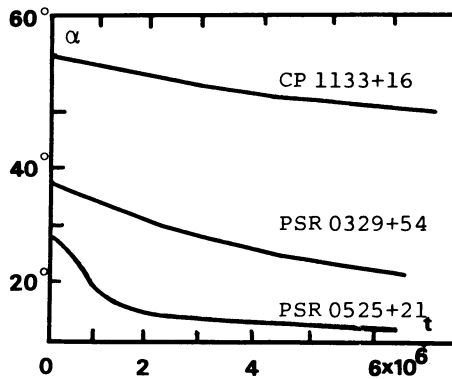


Fig. 1. The evolutionary curves of magnetic inclination for several pulsars

Reference

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