

DISTRIBUTION OF TWO TYPES OF PULSARS IN COMPARISON WITH THAT OF SNRS

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ABSTRACT. Recently, pulsars are classified into two types. On the basis of these data, it is possible to discuss the relation between these two types of pulsars and supernova remnants, respectively. In this paper, the statistical K-S test is used to judge whether the two samples of distributions may come from one original distribution or not.

According to the results of classification, 128 Type I and 174 Type II pulsars are presented. The distributions of Type I and II pulsars are compared with the longitudinal one of 160 galactic supernova remnants. The conclusions are that we can not say that the distribution of either Type I or II is similar to that of SNR.

Since there are four PSR being associated with SNR, the reasons why distribution of large sample gives an opposite conclusion may be as follows:

- a) Since large number of pulsars observed are around the sun, the selection effect may affect the conclusion strongly.
- b) Pulsars may exist in SNR but be undetectable, owing to the limitation of luminosity or the beaming effect.
- c) Supernova may occur without the formation of neutron stars.
- d) Because pulsars may be no active in the very early stage and its lifetime is about 100 times that of SNR, SNR may be disappeared when PSR become enough active to be detected.
- e) High  $z$ -distribution of PSR will also affect this conclusion.