

# **X-ray pulsars through the eyes of the current cosmic observatories**

A. Lutovinov, S. Tsygankov

Space Research Institute (IKI) (Moscow, Russia)

Most accurate at the moment results of the spectral and timing analysis of several dozen X-ray pulsars in hard X-rays are reviewed and compared with results of observations in standard X-rays. The evolution of cyclotron energy with the source luminosity was studied in detail for the first time for several sources. It was shown that for V0332+53 and A535+26 this dependence is linear, but for 4U0115+63 it is more complicated. No evolution was found for GX301-2, Vela X-1, Cen X-3, etc. A strong dependence of the pulse fraction on the energy and source luminosity was revealed and studied in detail. The prominent feature in the dependence of the pulse fraction on the energy was discovered near the cyclotron frequency for several bright sources. The obtained results are discussed in terms of current models; some preliminary explanations are proposed.