

Invited lecture

Fe K α LINE SIMULATIONS FOR BHs: THE SIMPLEST MODEL

A. F. Zakharov

*State Scientific Center - Institute of Theoretical and Experimental Physics,
Moscow, Russia
e-mail: zakharov@itep.ru*

We consider phenomena where we have to use general relativistic approaches to explain present and future observational data like Fe K α line profiles and shapes of shadows around black holes. Different X-ray missions such as ASCA, XMM-Newton, Chandra etc. discovered features of Fe K α lines and other X-ray lines as well. Attempts to fit spectral line shapes lead to conclusions that sometimes the profiles should correspond to radiating regions which are located in the innermost parts of accretion disks where contributions of general relativistic phenomena are extremely important. As an illustration we consider a radiating annulus model to clarify claims given recently by Müller & Camenzind (2004). We discuss properties of highly inclined disks and analyze a possibility to evaluate magnetic fields near black hole horizons.