Short talk

SOLUTION OF NLTE LINE TRANSFER PROBLEM BY USE

OF A FORTH-AND-BACK IMPLICIT Λ ITERATION

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Here we present the basic idea and the properties of a very fast convergent iterative method to solve NLTE line transfer problem. Forth-and-back implicit Λ-iteration dramatically accelerates the convergence of the classical Λ iteration (while retaining its straightforwardness) by use of forth-and-back approach together with an implicit representation of the source function in the computation of the radiation field intensities. The fact that no matrix operation is required and that the memory storage grows only linearly with the dimension of the problem makes this method very promising for more complicated radiative transfer problems.

Short talk

KINEMATICS AND VARIABILITY OF

III Zw 2 BROAD LINE EMISSION REGION

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In order to study emission line profiles of Lyα, Hβ, Hα, and Mg II λ2798 lines of the Seyfert 1 galaxy III Zw 2, the two-component model of broad-line region (BLR) has been proposed. The proposed two-component model, consisting of an inner Keplerian relativistic disk and an outer structure surrounding the disk, could be fitted well into the emission profiles. The fitting results of these four broad emission lines (BELs) came out higly consistent in both the inner and outer component parameters. Adopting a mass of $\sim 2 \times 108$Msolar for the central object, we found that the outer radius of the disk is approximately equal for the four considered lines ($\sim$0.01 pc), and the results for the inner radius of the disk are: 0.0018 pc for Lyα, 0.0027 pc for Mg II, and 0.0038 pc for the Balmer lines. Also, the narrow [O III] lines, indicated existance of at least two kinematicaly different emission-line regions. Flux variations of Hβ, with respect to the [O III] lines, have been also presented here, using long-term Hβ observations (1972-1990, 1998).