

On some peculiarities and applications of the Inverse Radiative Transfer Problem

by

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SUMMARY.

- I. Introduction to the stationary Inverse Radiative Transfer Problem.**
- II. Main features of the IRTP ,**
 - II.1. Well-posed problems,**
 - II.2. Ill-posed problems.**
- III. A paradoxical example of well-posed problem : the temperature of the early universe.**
- IV. Some limitations of the IRTP,**
 - IV.1. The retrieved fraction of knowledge,**
 - IV.2. Signal Analysis limitations,**
 - IV.3. Physical limitations.**
 - *the entropy cost of a measurement,**
 - * limitation in the spatial resolution.**
 - *the inaccessible informations**
- V. Brief review of the resolving methods with applications,**
 - V.1. The crude linear inversion in two practical examples,**
 - V.2. The projection method in axisymmetric media,**
 - V.3. The linear inversion (Philipps-Twomey),**
 - V.4. The Tichonov method of regularization,**
 - V.5. The iterative gradient methods,**
 - V.6. The Chahine relaxation method,**
 - V.7. The adjoint operator method (A perturbation method).**
- VI. Computer tomography of semi-transparent objects.**