

ON THE AVERAGING OF THE ABSORPTION COEFFICIENT IN RADIATIVE HEAT TRANSFER PROBLEMS

D. S. Netsvetayev, A. A. Shestakov

FSUE «RFNC – VNIITF named after Academ. E. I. Zababakhin», Snezhinsk, Russia

The paper discusses methods for averaging the absorption coefficients in radiative heat transfer calculations with drastic changes in the optical thickness. Comparative calculations were done for a test problem simulating the shock compression of a layered spherical system. The problem is rather difficult for the calculation of averaged absorption coefficients because the optical density varies in a very wide range under shock compression. Different methods for the averaging of absorption coefficients are compared. What made our analysis of these methods easier were the consistent averaged paths analytically calculated for this problem. With these paths we can do continuous-energy calculations in one-group approximation.
