

## INFLUENCE OF ION-DYNAMICS EFFECT ON THE SHAPE OF NEUTRAL ATOM SPECTRAL LINES

Z. MIJATOVIĆ

*Institute of physics, Trg Dositeja Obradovića 4, 21000 Novi Sad, Yugoslavia*

Here are presented the results of experimental investigation of the influence of ion-dynamics effect on the widths and shifts of neutral atoms spectral lines. Measured values are compared with the theories which treat ions as static and dynamic perturbers.

The influence of ion-dynamics is tested on five He I and two C I spectral lines. Helium is chosen as the lightest non-hydrogenic neutral emitter, while carbon is chosen as heavier neutral emitters. It could be expected that influence of ion-dynamics is greatest on spectral lines of the lightest emitters (He), while is less in the case of heavier ones (C).

The confirmation of this effect, especially for the He I lines, could be of great importance for plasma diagnostics purposes. It is shown that with the decrease of plasma electron density the importance of this effect increases. The magnitude of this influence reaches more than 40 % in the case of shifts of certain He I lines.