Spectroscopie des plasmas de Z élevé produits par laser –

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Emission and absorption spectroscopy of plasmas is one of the most interesting diagnostic allowing to obtain information of the plasma without any modification. The spectroscopy of plasmas produced by laser makes possible studying, in the laboratory, the emission of ions under extreme conditions of density and temperature that are usually found only in fusion or astrophysical plasmas.

But laser-matter interaction produced plasmas with an emission on ns time scales and spatial dimension of order of micron which introduces important variations in temperature and density in time and space. During the last decades, the development of the instrumentation in the laser-matter experiment have made possible to record the emission spectra of the multicharged ions from more and more homogeneous plasma, allowing a better understanding and comparison with theory. The different experiments spectroscopies done at LULI laser facilities will be presented with the contribution of the researchers we celebrate with this colloquium to the development of atomic physics in hot plasmas.