

Seminarium Zakładu Fizyki Teoretycznej

Departament Badań Podstawowych
Narodowego Centrum Badań Jądrowych

13 lutego 2019 r. (środa), godz.12:15
pawilon NCBJ, sala 22, Hoża 69

dr Andrzej HRYCZUK

(NCBJ, BP-2)

"IMPACT OF NON-EQUILIBRIUM EFFECTS ON THE EVOLUTION OF DARK MATTER

ABSTRACT:

Among viable dark matter (DM) production mechanisms the thermal freeze-out stands out as the most natural and best motivated one. In the usual theoretical approach to the determination of thermal relic abundance the assumption of local thermal equilibrium is made. But is this assumption always justified? In this talk I will first introduce the topic and then address this question. I will discuss more accurate treatments, one relying on the inclusion of higher moments of the Boltzmann equation and the second on solving the evolution of the phase space distribution function fully numerically. Examples where such improved treatment is necessary will be discussed, including DM annihilation below threshold, semi- or resonant annihilation.

Serdecznie zapraszamy,

M. Kowal, W. Piechocki, J. Skalski, L. Szymanowski