Eötvös Loránd Tudományegyetem
Természettudományi Kar
Fizikai Intézet

ORTVAY KOLLOKVIUM // Ortvay Seminar Series

2017. március 9. csütörtök 15:00-kor
9th March 2017., Thursday 3pm

Bill Poirier (Texas Tech University, Lubbock TX)

Quantum Mechanics without Wavefunctions

Abstract:

Seven years ago, the first paper was published [1] on what has come to be known as the “Many Interacting Worlds” (MIW) interpretation of quantum mechanics (QM) [2]. MIW is based on a new formulation of QM [1,3], in which the wavefunction Ψ(t, x) is discarded entirely. Instead, the quantum state is represented as an ensemble, x(t, C), of quantum trajectories or “worlds,” each of which has well-defined real-valued particle positions and momenta. The worlds interact, giving rise to all quantum behavior observed in nature. MIW offers insight into quantum phenomena such as entanglement, measurement, spontaneous decay, etc. Moreover, x(t, C) satisfies a trajectory-based action principle, which allows quantum theory (via Euler-Lagrange and Noether) to be placed on the same footing as classical (Newtonian and relativistic [4]) theories. Other benefits will also be discussed.

[1] B. Poirier, Chem. Phys. 370, 4 (2010).

[2] B. Poirier, Phys. Rev. X, 4, 040002 (2014).

[3] J. Schiff and B. Poirier, J. Chem. Phys. 136, 031102 (2012).

[4] B. Poirier, arXiv:1208.6260 [quant-ph], (2012).

Minden érdeklődőt szívesen látunk! Az előadás előtt negyed órával az előadóban teát szolgálunk fel.

All visitors are welcome. Tea and biscuits are served 15 min prior the lectures at the location.

Helyszín: ELTE Pázmány Péter s. 1/A alatti épületében a földszinti 0.81 (Ortvay) terem.

Location Lágymányos Eötvös Campus (address: Pázmány Péter s. 1/A), Northern Building, Room Ortvay (0.81).

Az előadás-sorozatról az interneten az "**ortvay-koll.elte.hu**" címen található információ.

Further information available at the "**ortvay-koll.elte.hu**" website.