

## The 18th IOPP Seminar: 马永亮 (Yong-Liang Ma) 教授, 国科大杭州高等研究院 (Hangzhou Institute for Advanced Study, UCAS) , Dec. 16th 2020, Wednesday, 10:00am (Beijing time)

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Speaker: 马永亮 (Yong-Liang Ma) 教授, 国科大杭州高等研究院 (Hangzhou Institute for Advanced Study, UCAS)

Title: Topology change, emergent symmetry and compact star matter

### Abstract:

The Physics of nuclear matter at high density is a totally uncharted domain. In our past effort, we found that, we combined the topology change which is a robust conclusion in the skyrmion approach to dense nuclear matter and the emergent hidden and local flavor symmetries which are hidden in the matter free space, the nuclear matter properties can be described in a unified effective theory (GnEFT) including, in addition to the Nambu-Goldstone boson pions and the nucleons, the lightest scalar meson and the vector mesons  $\rho$  and  $\omega$ . The compact star properties, the mass of the massive neutron star as well as the constraints from the gravitational wave detections can be satisfied. In this talk, I will discuss the main points of the GnEFT and its predictions.

### 报告人简介:

马永亮, 国科大杭州高等研究院基础物理与数学科学学院教授, 副院长。主要从事手征有效理论、强子结构、核物质性质及相关天体物理问题的研究工作。与合作者一起提出了致密核物质的赝共形模型, 对核物质中夸克-强子对偶提出了新的解释, 解释了原子核弱衰变中的  $g_A$  淬火问题, 系统研究了强子谱的手征对偶结构等。相关工作在 Phys. Rev. Lett., Phys. Rev. C、D 等杂志发表文章五十余篇, 受邀在 Prog.Part.Nucl.Phys. 等撰写综述多篇, 出版英文专著一部。