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The 169th HENPIC seminar by Prof. Feng Li, Lanzhou Univ., July 21, 2022, Thursday, 10:30 am (Beijing time)

Title: Jet Quenching at Finite Chemical Potentials and Near the Critical End Point

(https://lbnl.zoom.us/j/421173735?pwd=Z0IwTlM3eDB6UUo1L0VjaXdTQ2hBQT09)

Abstract: Jet quenching parameter $\hat{q}$ is an essential parameter that characterizes the interaction strength between jet partons and the QGP. Based on the quark-meson model, we conduct a first calculation on $\hat{q}$ at finite chemical potential up to the one-loop order, and find that the momentum broadening of jets is enhanced not only at high temperature, but also at high chemical potential. More precisely, the value of $\hat{q}$ in the chiral symmetry restored phase is found proportional to the parton number density. We further investigate the behavior of $\hat{q}$ near the critical end point (CEP) of the QCD phase diagram by coupling our calculation with a recently developed equation of state that includes a CEP in the
universality class of the Ising model.

About the speaker:
李峰，兰州大学青年研究员。2008 年于上海交通大学获得物理学学士学位，2016 年于 Texas A&M Univ. 获得理论核物理方向博士学位。2016-2018 年赴 Frankfurt Institute for Advanced Studies(FIAS) 从事博士后研究工作。2019 年 6 月以青年研究员身份加入兰州大学。目前的研究兴趣主要集中在大重子数夸克物质转向强子物质的相变、亚阈值重离子碰撞中奇异粒子的产额以及带自旋夸克的反常运动。