

İTÜ



MATEMATİK BÖLÜMÜ

Protein Structure Prediction with Quantum Computers

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This talk explores quantum approaches to protein structure prediction, beginning with a perspective on the computational hardness of the problem and how to systematically identify instances where quantum algorithms may provide meaningful advantages. I will discuss frameworks for problem selection and resource estimation that guide realistic assessments of quantum utility, supported by proof-of-concept demonstrations on quantum hardware. Building on this perspective, I then introduce a lattice-based formulation of protein folding using a face-centered cubic (FCC) encoding, designed to capture more realistic geometric and biochemical constraints while remaining compatible with near-term quantum algorithms. Together, these results highlight the importance of structure-aware problem formulation in advancing quantum methods for biomolecular modeling.

Tarih: 11 Mart 2026 Çarşamba

Saat: 14:30-15:30

Yer: Fen-Edebiyat Fakültesi B1-326

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