**Abstract for IAS Focused Program on Mathematical Foundations of Topological Materials (Jan 6-9, 2026)**

# Latent-Geometry Duality: Unravelling Hidden Symmetry Groups with Graph Theory

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Symmetries represent the cornerstone of modern physics. Recently, it has been shown that even asymmetric systems may have a so-called latent symmetry that becomes visible after performing an isospectral reduction. In this talk we will provide a new viewpoint on them by showing that latent symmetries arise from conventional symmetries through a similarity transformation; they are dual to each other. By integrating graph theory and group theory, our work uncovers the full symmetry group behind seemingly asymmetric structures, which substantially broadens symmetry analysis. Our results are applicable to generic discrete systems, such as tight-binding models, molecular Hamiltonians, waveguide networks, or electric circuits.