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Yongchao Lu: On Exact solutions in Superconformal Indices for N=2 Super Yang mills theories

Thursday, July 17, 2025 2:30 PM (30 minutes)

The superconformal index (SCI) provides a powerful non-perturbative tool for investigating supersymmetric quantum field theories, particularly in the presence of BPS defects. In this talk, I will present exact closed-form solutions of the SCI for 4d N=2 super Yang–Mills theories with all simple gauge groups (types A, B, C, D, E, F, and G). These solutions exhibit a unified mathematical structure that reveals intricate dependencies on the gauge group data and modular properties. The method also extends to defect indices, enabling exact results in the presence of line and surface defects.