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## The First Law of Complexity

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Based on Nielsen's geometric approach, the variation of holographic complexity for two nearby target states only depends on the end point of the optimal trajectory, a result designated as the first law of complexity. As an example, we will examine the complexity=action conjecture when the AdS vacuum is perturbed by a scalar field excitation, which corresponds to a coherent state.

**Primary authors:** BERNAMONTI, Alice (Università degli Studi di Firenze); GALLI, Federico (INFN); MYERS, Rob (Perimeter Institute); RUAN, Shan-Ming (Perimeter Institute); JUAN, Hernandez (Perimeter Institute); SIMÓN , Joan (University of Edinburgh)

Presenter: BERNAMONTI, Alice (Università degli Studi di Firenze)

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