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**Operational interpretations of quantum discord**[1] MARCO PIANI, University of Waterloo, DANIEL CAVALCANTI, National University of Singapore, LEANDRO AOLITA, ICFO-Institut de Ciencies Fotoniques, SERGIO BOIXO, California Institute of Technology, KAVAN MODI, National University of Singapore, ANDREAS WINTER, University of Bristol — Quantum discord quantifies non-classical correlations going beyond the standard classification of quantum states into entangled and unentangled ones. Although it has received considerable attention, it still lacks any precise interpretation in terms of some protocol in which quantum features are relevant. Here we give quantum discord its first information-theoretic operational meaning in terms of entanglement consumption in an *extended quantum state merging* protocol. We further relate the asymmetry of quantum discord with the performance imbalance in quantum state merging and dense coding.

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