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Constructing Sublinear Expectations on Path Space

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We provide a general construction of time-consistent sublinear expectations on the space of continuous paths. It yields the existence of the conditional G-expectation of a Borel-measurable (rather than quasi-continuous) random variable, a generalization of the random G-expectation, and an optional sampling theorem that holds without exceptional set. Our results also shed light on the inherent limitations to constructing sublinear expectations through aggregation.

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