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Optimal multiple stopping with random waiting times

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In the standard models for optimal multiple stopping problems it is assumed that between two exercises there is always a time period of deterministic length δ , the so called refraction period. This prevents the optimal exercise times from bunching up together on top of the optimal stopping time for the one-exercise case. In this article we generalize the standard model by considering random refraction times. We develop the theory and reduce the problem to a sequence of ordinary stopping problems thus extending the results for deterministic times. This requires an extension of the underlying filtrations in general. Furthermore we consider the Markovian case and treat an example explicitly.

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