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An invariance principle in $L^2[0,1]$ ***for non stationary*** φ***-mixing sequences***

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Abstract: Invariance principle in $L^2(0,1)$ is studied using signed random measures. This approach to the problem uses an explicit isometry between $L^2(0,1)$ and a reproducing kernel Hilbert space giving a very convenient setting for the study of compactness and convergence of the sequence of Donsker functions. As an application, we prove a $L^2(0,1)$ version of the invariance principle in the case of φ-mixing random variables. Our result is not available in the $D(0,1)$-setting.

Keywords: reproducing kernel Hilbert space, random measure, invariance principle, φ-mixing
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