1092-60-74   **Dalibor Volny** (`dalibor.volny@univ-rouen.fr`) and **Yizao Wang*** (`yizao.wang@uc.edu`).
Invariance principle for stationary random fields under Hannan's condition.

We establish an invariance principle for a general class of stationary random fields indexed by Z^d, under Hannan's condition generalized to Z^d. To do so we first establish a uniform integrability result for stationary orthomartingales, and second we establish a coboundary decomposition for certain stationary random fields. At last, we obtain an invariance principle by developing an orthomartingale approximation. Our invariance principle improves known results in the literature, and particularly we require only finite second moment. (Received July 29, 2013)