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Cristina Tone* (crtone@indiana.edu), Indiana University, Department of Mathematics, 831 East 3rd St, Bloomington, IN 47405. *Central Limit Theorems for Hilbert-space Valued Random Fields Satisfying a Strong Mixing Condition.*

We want to study the asymptotic normality of the normalized partial sum of a strictly stationary Hilbert-space valued random field satisfying a strong mixing condition. We proceed by first proving a central limit theorem for a ρ' -mixing strictly stationary random field of real-valued random variables. Next, we extend the real-valued case to a strictly stationary random field of m -dimensional random vectors satisfying the same conditions. Finally, we extend the finite-dimensional case to an (infinite-dimensional) Hilbert space-valued random field satisfying the ρ' -mixing condition. (Received September 19, 2009)