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Firas Rassoul-Agha* (firas@math.utah.edu), 155 S 1400 E, Salt Lake City, UT 84112, and Timo Seppalainen (seppalai@math.wisc.edu), 419 Van Vleck Hall, Madison, WI 53706. An Almost Sure Invariance Principle for Non-Nestling Random Walk in Mixing Random Environment.

We consider a ballistic (non-nestling) random walk in a (Dobrushin-Shlosman) mixing random environment. We assume an exponential moment for the step of the walk, uniformly in the environment. We prove an invariance principle (functional central limit theorem) under almost every fixed environment. The main point behind the invariance principle is that the quenched mean of the walk behaves subdiffusively. (Received August 07, 2006)