1026-60-100 **Elena Kosygina*** (elena_kosygina@baruch.cuny.edu), One Bernard Baruch Way, Box B6-230, New York, NY 10010, and **Srinivasa R. S. Varadhan**. *Homogenization of Hamilton-Jacobi-Bellman equations with respect to time-space shifts in a stationary ergodic random medium.*

We consider a family $\{u_\epsilon(t,x,\omega)\},\ \epsilon>0$, of solutions of the final value problem

$$\frac{\partial u_\epsilon}{\partial t}+\frac{\epsilon}{2}\,\Delta u_\epsilon + H\left(\frac{t}{\epsilon},\frac{x}{\epsilon},\nabla u_\epsilon,\omega\right)=0,\quad u_\epsilon(T,x,\omega)=U(x),$$

where the time-space dependence of the Hamiltonian $H(t,x,p,\omega)$ is realized through the shifts in a stationary ergodic random medium. For Hamiltonians, which are convex in p and satisfy certain growth and regularity conditions, we show the almost sure locally uniform in time and space convergence of $u_\epsilon(t,x,\omega)$ as $\epsilon\to 0$ to the solution $u(t,x)$ of a deterministic "effective" equation

$$\frac{\partial u}{\partial t}+\bar{H}(\nabla u)=0,\quad u(T,x)=U(x).$$

The averaged Hamiltonian $\bar{H}(p)$ is given by a variational formula. (Received February 19, 2007)