We are dealing with the Navier-Stokes equation in a bounded regular domain $D$ of $\mathbb{R}^2$, perturbed by an additive Gaussian noise $\partial w^Q_\delta / \partial t$, which is white in time and colored in space. We assume that the correlation radius of the noise gets smaller and smaller as $\delta \downarrow 0$, so that the noise converges to the white noise in space and time. For every $\delta > 0$ we introduce the large deviation action functional $S_{0,T}^\delta$ and the corresponding quasi-potential $U_\delta$ and, by using arguments from relaxation and $\Gamma$-convergence we show that $U_\delta$ converges to $U = U_0$, in spite of the fact that the Navier-Stokes equation has no meaning in the space of square integrable functions, when perturbed by space-time white noise. Moreover, in the case of periodic boundary conditions the limiting functional $U$ is explicitly computed.

Finally, we apply these results to estimate of the asymptotics of the expected exit time of the solution of the stochastic Navier-Stokes equation from a basin of attraction of an asymptotically stable point for the unperturbed system.

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