Abstract: The fractional Gaussian noise is a formal derivative of a fractional Brownian motion with Hurst parameter $H \in (0,1)$. An explicit formula for a solution to stochastic differential equations with a multiplicative fractional Gaussian noise in a separable Hilbert space is given. The large time behaviour of the solution is studied. In addition, equations of this type with a nonlinear perturbation of a drift part are investigated in the case $H > 1/2$.

Keywords: Fractional Brownian Motion, Stochastic Differential Equations in Hilbert Space, Explicit Formula for Solution