Referee report on the paper Math-9983

“The pullback attractor for the 2D g-Navier-Stokes equation with nonlinear damping and time delay”

In this paper, the global well-posedness of solutions for 2D non-autonomous g-Navier-Stokes equations with nonlinear damping and time delay on bounded domains were investigated. Then the existence of pullback attractors for 2D g-Navier-Stokes equations was obtained by using the method of pullback condition (PC). The result is new, and I recommend it for publication in AIMS Mathematics.

Some suggestions are as follows.

(1) The expression in English could be standardized, for example, P.4, line 5 of Preliminaries: “rewited” should be “rewritten”.

(2) In inequalities of (2.8) and (2.10), “log” should be “ln”.

(3) P.9, line -15, “Hence \( \frac{d}{dt}|u|^2 \leq v\gamma_0 \|u\|^2 + \frac{|f|^2}{v\lambda_1} \)” should be

\[
\frac{d}{dt}|u|^2 \leq v\gamma_0 \|u\|^2 + \frac{|f|^2}{v\lambda_1} + \frac{1}{C_g}|h(t,u_t)|^2.
\]

(4) P.10, line 12, “We deduce \( \frac{d}{dt}\|u\|^2 + (\nu - C_g - \frac{2\nu|\nabla g|_{L^2}}{m_0\lambda_0^{3/2}})|A_g u|^2 \leq \frac{1}{\nu}|f|^2 \)” should be \( \frac{d}{dt}\|u\|^2 + (\nu - C_g - \frac{2\nu|\nabla g|_{L^2}}{m_0\lambda_0^{3/2}})|A_g u|^2 \leq \frac{1}{\nu}|f|^2 + \frac{1}{C_g}|h(t,u_t)|^2 \).