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Fan Ny Shum* (fan.shum@uconn.edu). *Stability of a \mathbb{C}^2 -valued Coupled System.*

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Namely, we present numerical results on the complex-valued ODE

$$\begin{cases} \dot{z}_t = -\nu z_t + \alpha z_t w_t \\ \dot{w}_t = -\nu w_t + \beta z_t w_t \\ z_0, w_0 \in \mathbb{C}, \end{cases} \quad \text{where } \nu \in \mathbb{R}^+, \alpha, \beta \in \mathbb{R}.$$

We show this ODE has solutions that blow up in finite time and can be stabilized by the addition of a Brownian term. Furthermore, we numerically computed the steady-state distribution of the system with an additive Brownian term. This is a higher-dimensional example of the system studied by David Herzog and Jonathan Mattingly. They showed an explosive system of ODEs in the form of a complex-valued polynomial is stabilized by an isotropic Brownian term. (Received September 07, 2015)