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Vincent R Martinez* (vmartin6@tulane.edu), Mathematics Department, Tulane University, 6823 St. Charles Ave, New Orleans, LA 70118, and **Animikh Biswas, Prabath Silva and Kun Zhao.** *Studies in analyticity for hydrodynamic and chemotaxis models.*

In their 1987 seminal paper, Foias and Temam established analyticity in both space and time for solutions of the two- (2D) and three-dimensional (3D) Navier-Stokes equations (NSE) by developing an energy method known as the Gevrey-norm technique, i.e., a norm which characterizes real analyticity of a function. This technique has since become standard for establishing spatial analyticity of solutions to various parabolic equations. In this talk, we shed light on the relation between the structure of the equation and its well-posedness theory in various analytic Gevrey-norm regularity classes. We do so in the context of the supercritical SQG equation, the Keller-Segel equation, and coupled chemotaxis-hydrodynamic models. (Received March 21, 2017)