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California, 3620 South Vermont Ave., Los Angeles, CA 90089. Gevrey-class regularity for the Euler
equations on a domain with boundary.

We estimate the domain of analyticity and Gevrey-class regularity of solutions to the Euler equations on the half-space, and on a three-dimensional bounded domain. We obtain new lower bounds for the rate of decay of the real-analyticity radius of the solution, which depend algebraically on the Sobolev norm. In the case of the bounded domain, using Lagrangian coordinates, we prove the persistence of the non-analytic Gevrey-class regularity. (Received September 13, 2009)