

## Abstract

We study 2D compressible Euler flows in bounded impermeable domains whose boundary is smooth except for corners. We assume that the angles of the corners are small enough. Then we obtain local (in time) existence of solutions which keep the  $L^2$  Sobolev regularity of their Cauchy data, provided the external forces are sufficiently regular and suitable compatibility conditions are satisfied. Such a result is well known when there is no corner. Our proof relies on the study of associated linear problems. We also show that our results are rather sharp: we construct counterexamples in which the smallness condition on the angles is not fulfilled and which display a loss of  $L^2$  Sobolev regularity with respect to the Cauchy data and the external forces.