Sobolev algebra, associated to a semigroup of operator.

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In this talk, we are interested in Sobolev spaces defined via an abstract self-adjoint operator generating a semigroup. A natural question is to prove that the intersection of such homogeneous Sobolev space intersected with L^∞ satisfies the algebra property, as in the Euclidean setting. What assumptions, put on the semigroup to prove such inequalities ? We will give some answers, using the paraproducts approach. A chain rule property and some paralinearization formula will be also described. This work is joint with Thierry Coulhon and Dorothee Frey.