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Function spaces related to BMO

In their 1961 paper on functions of bounded mean oscillation, John and Nirenberg also considered functions satisfying a variant of this condition for $1 < p < \infty$, which they showed lie in weak L^p. The space of functions satisfying this condition was subsequently named JN_p, and it contains L^p, but it was not known whether this inclusion was proper. In joint work with T. Hytönen, R. Korte and H. Yue, we demonstrate this by means of a counterexample, while at the same time showing that the two spaces coincide in the case of monotone functions in one dimension. Moreover, we prove a duality theorem for this space, analogous to the duality of BMO with the real Hardy space H^1.