

# Fractional Sobolev regularity for fully nonlinear elliptic equations

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## Talk Abstract

We study high-order fractional Sobolev regularity for fully nonlinear, uniformly elliptic equations, in the presence of unbounded source terms. More precisely, we show the existence of a universal number  $0 < \varepsilon < 1$ , depending only on ellipticity constants and dimension, such that if  $u$  is a viscosity solution of  $F(D^2u) = f(x) \in L^p$ , then  $u \in W^{1+\varepsilon,p}$ , with appropriate estimates. Our techniques are based on touching the solution with  $C^{1,\alpha}$  cone-like functions to produce a decay rate of the measure of certain sets.

**Keywords:** regularity theory, viscosity solutions,  $C^{1,\alpha}$ -aperture functions.

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## References

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