

# $L^1$ estimate for elliptic differential operators

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## Abstract

In this lecture we present a characterization of  $L^1$  Sobolev-Gagliardo-Nirenberg estimate for elliptic differential operators with variable coefficients. As application we obtain the previous results in [HP1] and [HP2].

This is joint work with Jorge Hounie (UFSCar).

## References

- [HP1] J. Hounie and T. Picon *Local Gagliardo-Nirenberg estimates for elliptic of vector fields*, Math. Res. Lett. **18** (2011), no. 04, 791–804.
- [HP2] J. Hounie and T. Picon *Local  $L^1$  estimates for elliptic systems of complex vector fields*, Proc. Amer. Math. Soc. v. 143 (2015), p. 1501-1514.
- [HP3] J. Hounie and T. Picon  *$L^1$  Sobolev estimates for (pseudo)-differential operators and applications*, (submitted).
- [VS] J. Van Schaftingen, *Limiting Sobolev inequalities for vector fields and canceling linear differential operators*, J. Eur. Math. Soc. **5** (2013), no. 3, 877–921.