

Mean value property and PDEs

Antoni Kijowski

During my talk I will compare functions with the mean value property (MVP) with solutions to PDEs. I will give an insight into three notions of MVP: strong, weak and asymptotic. Then, I will focus on two results:

1. a characterization of continuous viscosity solutions of the normalized p -Laplacian via asymptotic mean value property in Carnot groups [1].
2. a PDE characterization of functions which possess MVP, when the underlying space is equipped with a norm induced metric and a weighted Lebesgue measure [2].

References

- [1] T. Adamowicz, A. Kijowski, A. Pinamonti, B. Warhurst, *Variational approach to the asymptotic mean-value property for the p -Laplacian on Carnot groups*. arXiv:1907.01392.
- [2] A. Kijowski, *Characterization of mean value harmonic functions on norm induced metric measure spaces with weighted Lebesgue measure*. arXiv:1804.10005.