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Luca Spolaor* (lspolaor@princeton.edu). *Logarithmic Epiperimetric inequality and the regularity of the free-boundary.*

In this talk I will introduce a new Logarithmic Epiperimetric inequality and show how the regularity of the free-boundary can be deduced from it in many problems, such as the Obstacle, Thin-Obstacle and Alt-Caffarelli problems. If time permits, I will give an idea of how the inequality is proved. These are joint works with Maria Colombo, Max Engelstein and Bozhidar Velichkov. (Received January 19, 2018)