

# Measuring the stability in linear optimization

Marco A. López-Cerdá \*

## Abstract

In this talk we focus mainly on linear programming problems, and particularly on Lipschitz-type properties of the feasible set mapping, the optimal value function, and the optimal set (argmin) mapping. Roughly speaking, we aim to compute or estimate the rate of variation of feasible/optimal solutions with respect to the problem's data perturbations. Some of these properties are local (as Aubin property and calmness), as far as they concentrate around a certain solution nearby a given parameter. Some other properties (such as Hoffman stability) are of a global nature, since they tackle global variations of the whole solution set. The quantitative stability measures provided in this talk are mainly point-based, as they only involve the given problem's data, not appealing to points or parameters in a neighborhood of them; thus they are conceptually implementable in practice.

---

\*Universidad de Alicante, marco.antonio@ua.es