

**LOCAL LINEAR CONVERGENCE
OF ALTERNATING PROJECTIONS
IN METRIC SPACES WITH BOUNDED CURVATURE**

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In this talk we consider the popular and classical method of alternating projections for finding a point in the intersection of two closed sets. By situating the algorithm in a metric space, equipped only with well-behaved geodesics and angles (in the sense of Alexandrov), we are able to highlight the two key geometric ingredients in a standard intuitive analysis of local linear convergence. The first is a transversality-like condition on the intersection; the second is a convexity-like condition on one set: “uniform approximation by geodesics”.

REFERENCES

- [1] A.S. Lewis, G. López-Acedo, A. Nicolae, Local linear convergence of alternating projections in metric spaces with bounded curvature (submitted).
- [2] A.S. Lewis, D.R. Luke, J. Malick, Local linear convergence for alternating and averaged non-convex projections, *Found. Comput. Math.* 9 (2009), 485–513.
- [3] D. Noll, A. Rondepierre, On local convergence of the method of alternating projections, *Found. Comput. Math.* 16 (2016), 425–455.