

*Speaker:* **Aris Daniilidis** (VADOR, TU Wien, Austria)

*Title:* Alternating projections: self-contractedness and variational stability

*Abstract:* Alternate projection method is a classical approach to deal with the convex feasibility problem. In this talk we show that given two nonempty closed convex sets  $A$  and  $B$ , the consecutive projections  $x_{n+1} = P_B(P_A(x_n))$ ,  $n \geq 1$  produce a self-contacted sequence (ensuring an explicit asymptotic behavior and an alternative way to establish convergence in the finite dimensional case). We also study the variational stability of the above method in a Hilbert space setting and discuss the state-of-the-art.

**References:**

A. BÖHM, A. DANILIDIS, Ubiquitous algorithms in convex optimization generate self-contracted sequences, *J. Convex Anal.* **29** (2022) 119–128.

F. BATTISTONI, C. DE BERNARDI, A. DANILIDIS, E. MIGLIERINA  
Characterizations of regularity via variational stability of alternating projections sequences, [arXiv 2511.97853](https://arxiv.org/abs/2511.97853) (preprint 16p, 2025)