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**Fakultät für Mathematik**  
Oskar-Morgenstern-Platz 1  
A-1090 Vienna  
Austria

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## ONE WORLD OPTIMIZATION SEMINAR

March 14<sup>th</sup> 2022 @ 15:30 CET (Central European Time)

**BRUNO F. LOURENÇO**

(The Institute of Statistical Mathematics Tokyo)

### **Error Bounds and Facial Residual Functions for Conic Linear Programs**

**Abstract.** We consider the following question: given two sets with nonempty intersection and some arbitrary point  $x$ , how to estimate the distance from  $x$  to the intersection using the distances from  $x$  to each individual set?

This question, which appears in many different guises, can be answered through the study of error bounds. In this talk, we will overview a new methodology for obtaining error bound results in conic programming. Our tools of trade will be the so-called "facial residual functions" which, when combined with facial reduction, allow the computation of error bounds for problems over any closed convex cone. As concrete examples, we will show new results for symmetric cones, exponential cones and  $p$ -cones.

This talk is based on joint works with Scott B. Lindstrom and Ting Kei Pong: arxiv:2010.16391 and arxiv:2109.11729.

*The link of the zoom-room of the meeting and the corresponding password will be announced the day before the talk on the mailing list of the seminar, to which one can subscribe on <https://owos.univie.ac.at>.*