

Positivity on algebras with involution

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The aim of the project is to further develop the notion of positive cone as introduced in [2]. Of particular interest could be: investigating more precise properties in the case of central simple algebras (such as being Archimedean), or looking into possible extensions to some well-known infinite-dimensional algebras.

The proposed topic fits within the supervisor's joint project with T. Unger on developing noncommutative real algebra. The candidate is expected to have a strong background in algebra, including some familiarity with orderings on fields or quadratic and hermitian forms (ideally both).

References

- [1] V. Astier and T. Unger. Positive cones and gauges on algebras with involution. *International Mathematics Research Notices*, published on-line 30/12/2020, 1-45
- [2] V. Astier and T. Unger. Positive cones on algebras with involution. *Advances in Mathematics* 361:106954, 2020.