



CENTRO DE
MATEMÁTICA
UNIVERSIDADE DO PORTO

Seminar on Semigroups, Automata and Languages

Thursday, May 17, 2025, 14:30

Online Zoom Meeting

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TWISTED GRAPH GROUPS: A GENERALIZATION OF RAAGS VIA MIXED GRAPHS.

Right-angled Artin groups (RAAGs) are fundamental objects in geometric group theory. They are defined by simplicial graphs, with generators corresponding to vertices and commutation relations determined by edges. This talk introduces twisted right-angled Artin groups (T-RAAGs), a natural extension of RAAGs constructed from mixed graphs that include both undirected and directed edges. Undirected edges impose the usual commutation relations ($ab = ba$), while directed edges introduce Klein-type relations of the form ($aba = b$). I present a normal form for elements in T-RAAGs, which helps to analyse their algebraic and geometric properties. The talk compares the structure of T-RAAGs with that of RAAGs, emphasising both similarities and differences that arise from the presence of directed edges. I also give some remarks on the twisted trace monoid associated with a mixed graph and explain how it connects to the structure of the corresponding T-RAAG.

This session will be held in the following Zoom link:

<https://fc-up-pt.zoom.us/j/85665346562>



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