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Paula Cerejeiras* (pceres@ua.pt), Departamento de Matemática, Universidade de Aveiro,
Campus de Santiago, P-3810-193 Aveiro, Portugal. *On quaternionic Gabor frames.*

In this talk we present quaternionic Gabor frames based on the two-sided quaternionic windowed Fourier transform (2sQWF, for short). The 2sQFT is one of the most interesting cases of a quaternionic windowed Fourier transform with applications to image processing. However, the 2sQWF presents several challenges. To begin with, it is neither left- nor right-linear with respect to quaternionic constants. Since methods of classical Hilbert spaces do not work in this case it is required to introduce appropriated versions of translation and modulation operators. In this context, we prove Janssen's and Walnut's representations, as well as modified versions of the Wexler-Raz biorthogonality and Ron-Shen duality based on the concept of correlation function. This will enable us to present a characterization of tight quaternionic Gabor frames.

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