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Oriented Brauer categories

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The oriented Brauer category OB is the free K-linear symmetric monoidal category generated by a single object and its dual. I will talk about its representations (= the K-linear functors from OB to vector spaces), which can be understood via a triangular decomposition $\mathrm{OB} = \mathrm{OB}^-\mathrm{OB}^0\mathrm{OB}^+$ in which the diagonal part OB^0 looks roughly like a product of two symmetric groups. There is also an affine analog of the category OB obtained by adjoining an extra polynomial generator. The affine oriented Brauer category has various cyclotomic quotients, the simplest of which recovers the original category OB. In general these cyclotomic quotients categorify certain tensor products of lowest and highest weight representations.

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