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Division algebraic symmetry breaking

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Can the 32C-dimensional algebra $R(x)C(x)H(x)O$ offer anything new for particle physics? Indeed it can. Here we identify a sequence of complex structures within $R(x)C(x)H(x)O$ which induces a cascade of breaking symmetries: $Spin(10) \rightarrow$ Pati-Salam \rightarrow Left-Right symmetric \rightarrow Standard model + B-L (both pre- and post-Higgs-mechanism). These complex structures derive from the octonions, then from the quaternions, then from the complex numbers.

Primary authors: Dr FUREY, Nichol (Humboldt-Universität zu Berlin); Dr HUGHES, Mia (Imperial College London)

Presenter: Dr FUREY, Nichol (Humboldt-Universität zu Berlin)

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