EPW cubes are projective hyper-Kähler varieties of dimension 6, constructed by Iliev, Kapustka, Kapustka, and Ranestad. Their construction and behavior share many similarities with the double EPW sextics constructed by O'Grady. Both double EPW sextics and EPW cubes are among the few classes of hyper-Kähler varieties for which it is possible to provide a geometric construction for the general element in their moduli space.

In this talk, we will briefly introduce hyper-Kähler varieties and their moduli spaces. We will describe the construction of double EPW sextics and EPW cubes, along with their properties. Finally, we will discuss how, following O'Grady's results, we obtain a hyper-Kähler resolution of singular EPW cubes.