Utra-massive white dwarf models

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White dwarf stars are the most common end point of stellar evolution. Of special interest are the ultramassive white dwarfs, as they are related to type Ia Supernovae explosions, merger events, and Fast Radio Bursts. Ultra-massive white dwarfs are expected to harbour oxygen-neon (ONe) cores as a result of single standard stellar evolution. However, a fraction of them could have carbon-oxygen (CO) cores. Recent studies, based on the new observations provided by the *Gaia* space mission, indicate that a small fraction of the ultramassive white dwarfs experience a strong delay in their cooling, which cannot be attributed only to the occurrence of crystallization, thus requiring an unknown energy source able to prolong their life for long periods of time. In this talk we present ultra-massive white dwarf models both for CO and ONe chemical composotion, that consider all the relevant energy sources that control their evolution and a realistic core chemical profile. We show that the energy released by ^{22}Ne sedimentation in the deep interior of ultramassive white dwarfs with CO cores is in line with the long cooling delay of these stellar remnants.