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Novel Shell Model Analysis of the Double Beta Decay Matrix Elements for 136Xe[1] MIHAI HOROI, Department of Physics, Central Michigan University, Mount Pleasant, MI 48859 — Recent experimental results of two-neutrino [Phys. Rev. Lett. 107, 212501 (2011), Phys. Rev. C 85, 045504 (2012)] and neutrinoless double beta decays [arXiv:1205.5608,1205.6372] of 136Xe indicate an improved limit of the effective neutrino mass in the standard scenario of exchange of left-handed massive Majorana neutrinos. I will present a novel shell model analysis of the double beta decay matrix elements in an extended shell model space in which the Ikeda sum-rule is satisfied.

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