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Nuclear matrix elements of the double beta decay for mass around 80 NAOTAKA YOSHINAGA, Saitama University, KOJI HIGASHIYAMA, Chiba Institute of Technology, ERI TERUYA, Saitama University — In nature there are 30 kinds of nuclei which are expected to have double beta decays. Among them ten nuclei are actually observed for the neutrino double beta decays. Still no observation is made for the neutrinoless double beta decays ($0\nu\beta\beta$). The $0\nu\beta\beta$ decay is expected to occur only when neutrinos have masses and they are Majorana particles. In that respect observation of $0\nu\beta\beta$ is to determine whether neutrinos are Majorana particles or not. In theoretical side in order to estimate the half life of $0\nu\beta\beta$ determination of the nuclear matrix elements are essential. They were calculated in many theoretical frameworks, but the results are not consistent in various models. In this study we carry out shell model calculations for ^{82}Se and ^{82}Kr nuclei. After obtaining the wavefunctions, we calculate the nuclear matrix elements. For comparison we make pair truncated shell model calculations.

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