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Decay spectroscopy around 78Ni

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A β -decay spectroscopy experiment in the closest vicinity of 78Ni was performed at RIBF as a part of the EURICA campaign. The low-lying level structure in odd-mass isotonic chain along the neutron magic number of N=50 is determined by the neutron single-particle evolution with decreasing proton number. Some reduction of the neutron single-particle energy gap between 2d5/2 and 3s1/2 orbitals was already indicated by the β -decay studies on 83Ge. Theoretical models, that have attempted to extend this evolution towards 78Ni, are not yet in agreement. We have performed the β -decay measurement of neutron-rich Cu isotopes in order to determine the low-lying level structure in Zn istopes which have only two valence protons above 78Ni. In this contribution, the newly constructed level schemes of 79-81Zn will be presented. The shell structure and its evolution based on the comparison with shell-model calculations will also be discussed.

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