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Nuclear level densities of 64,66Zn from neutron evaporation ANTHONY PAUL RAMIREZ, ALEXANDER VOINOV, STEVEN GRIMES, CARL BRUNE, THOMAS MASSEY, Ohio University — The neutron spectra from the reactions ^{63}Cu(d,n)^{64}Zn and ^{65}Cu(d,n)^{66}Zn have been measured at deuteron beam energies of 6 and 7.5 MeV. Level densities of the residual nuclei ^{64}Zn and ^{66}Zn were extracted and compared with different level density models: (1) Gilbert-Cameron model, (2) Backshifted Fermi gas model using the Egidy systematics, and (3) microscopic combinatorial level densities. We found that the Gilbert-Cameron model closely agrees with the experimental results. We have also studied the non-compound component of the reactions from the neutron angular distributions. The non-compound component has been shown to be dominant in forward angles and is more pronounced at high neutron emission energies. We have also observed a slight enhancement of the non-compound contribution as the incident deuteron energy is increased.

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