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Level density and radiative strength of ^{116,117}Sn ANDREAS SCHILLER, Ohio University, UNDRAA AGVAANLUVSAN, Stanford University, ANN CECILIE LARSEN, Oslo University, ROSITSA CHANKOVA, North Carolina State University, MAGNE GUTTORMSEN, Oslo University, GARY E. MITCHELL, North Carolina State University, SUNNIVA SIEM, Oslo University, ALEXANDER VOINOV, Ohio University — We have determined the level density and radiative strength function for energies less than the neutron separation energy for the isotopes ^{116,117}Sn using the Oslo method. The excited nuclei were produced by the (^{3}He,α) and (^{3}He,^{3}He$'$) reactions, respectively, from a 38-MeV-^{3}He beam bombarding a highly enriched ^{117}Sn target. The level densities show the characteristic near-exponential increase with energy and a factor 5 difference in magnitude due to the odd-even effect. Step structures which indicate successive pair breaking are superimposed the general trend. The radiative strength function of ^{117}Sn shows a dramatic increase in slope above 4.5 MeV γ energy. Connecting our data, from below the neutron separation energy to literature data above this value (obtained from the (γ, n) reactions) suggests the presence of a pygmy resonance with a centroid just above the neutron separation energy of 7 MeV and about 5–10 times the strength of the M1 spin-flip resonance or 1–2% of the TRK sum rule.

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