Stellar kinematics of the Andromeda II dwarf spheroidal galaxy

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We present kinematical profiles and metallicity for the M31 dwarf spheroidal (dSph) satellite galaxy AndromedaII (AndII) based on Keck DEIMOS spectroscopy of 531 red giant branch stars. Our kinematical sample is among the largest for any M31 satellite and extends out to two effective radii (r eff = 53 = 1.1kpc). We find a mean systemic velocity of -192.4 ± 0.5kms-1 and an average velocity dispersion of ?v = 7.8 ± 1.1kms-1. While the rotation velocity along the major axis of AndII is nearly zero (<1kms-1), the rotation along the minor axis is significant with a maximum rotational velocity of v max = 8.6 ± 1.8kms-1. We find a kinematical major axis, with a maximum rotational velocity of vmax = 10.9 ± 2.4kms-1, misaligned by 67° to the isophotal major axis. AndII is thus the first dwarf galaxy with evidence for nearly prolate rotation with a v max/?v = 1.1, although given its ellipticity of ? = 0.10, this object may be triaxial. We measured metallicities for a subsample of our data, findi