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Critical anomalous Hall behavior in Pt/Co/Pt trilayers grown on paper with perpendicular magnetic anisotropy. WENRU CHE, XIAOFEI XIAO, NIUYI SUN, YANQING ZHANG, RONG SHAN, ZHENGANG ZHU, None — Perpendicular magnetic anisotropy was observed in Pt/Co/Pt trilayers prepared on three kinds of paper substrates with conspicuous difference of roughness by sputtering. Anomalous Hall effect exhibits well magnetic transport properties for partial samples. The trends of Hall resistivity over longitudinal resistivity (ρ_{AH}/ρ_{XX}) versus ρ_{XX} are bending instead of a traditional linear relationship for thick single-layer Co films. Further, study reveals that this behavior strongly depends on ratios among contributions from the skew scattering induced by residual resistance and phonons, the side jump and the intrinsic parts in anomalous Hall effect. A 3D map of correlation coefficients (R) of ρ_{AH}/ρ_{XX} and ρ_{XX} shows the ratios locate at a critical and ultra-narrow area for our trilayers. This study may throw new light on the understanding of anomalous Hall effect as well as lead to an economical and practical method to fabricate Hall devices on flexible substrates.

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None

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