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Spin Texture in a Cold Exciton Gas ALEXANDER HIGH, AARON HAMMACK, JASON LEONARD, SEN YANG, LEONID BUTOV, UC San Diego, TOMAS OSTATNICKY, Charles University, Prague, ALEXEI KAVOKIN, University of Southhampton, ARTHUR GOSSARD, UC Santa Barbara — We report on the observation of a spin texture in a cold exciton gas in a GaAs/AlGaAs coupled quantum well structure. The spin texture is observed around the rings in the exciton emission pattern. The observed phenomena include: a ring of linear polarization, a vortex of linear polarization with polarization perpendicular to the radial direction, an anisotropy in the exciton flux, a skew of the exciton fluxes in orthogonal circular polarizations and a corresponding four-leaf pattern of circular polarization, and a periodic spin texture. These phenomena emerge when the exciton gas is cooled below a few Kelvin.

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