In this presentation I will follow up on our recent discovery of circular polarization signals in the rotational line profiles of molecules that are negligibly sensitive to the Zeeman effect. Since our initial findings obtained in the Orion KL star-forming region, similar detections have also been secured in a supernova remnant (SN IC 443 (G)) and at least one more molecular cloud. These new results have clearly established that the circular polarization arises, as previously predicted, from the conversion of linear polarization signals incident on the molecules responsible for the detected radiation. I will further show how the anisotropic resonant scattering model we developed to explain these observations also naturally provides the answer to a long standing puzzle concerning the polarization characteristics of SiO maser lines in the circumstellar envelope of evolved stars.

Refreshments will be available.