Three-Dimensional Yielding in Anisotropic Materials: Validation of Hill Criterion

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Figure SI-1: For the Corn-starch suspension, (a) Normal force ($F_N$) experienced by the rheometer top plate and the corresponding rotational shear rate ($\dot{\gamma}$) is plotted as a function of rotational shear stress ($\tau_{0z}$) till the yield point in the purely rotational experiment. For the same system, (b) Radial shear stress ($\tau_{rz}$) is plotted as a function of rotational shear stress ($\tau_{0z}$). In the inset of (b) $\tau_{rz}/\tau_{0z,y}$ is plotted with respect to $\tau_{0z}/\tau_{0z,y}$. All the above results are obtained at $E = 0.5$ kV/mm.
Figure SI-2: For the Corn-starch suspension (a) Normal force \( F_N \) experienced by the rheometer top plate and the corresponding rotational shear rate \( \dot{\gamma} \) is plotted as a function of rotational shear stress \( \tau_{0z} \) till the yield point in the purely rotational experiment. For the same system (b) Radial shear stress \( \tau_{rz} \) is plotted as a function of rotational shear stress \( \tau_{0z} \). In the inset of (b) \( \tau_{rz}/\tau_{rz,y} \) is plotted with respect to \( \tau_{0z}/\tau_{0z,y} \). All the above results are obtained at \( E = 1.0 \text{ kV/mm} \).