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**On the mechanics of entangled random fiber networks with friction** GOPINATH SUBRAMANIAN, CATALIN PICU, Rensselaer Polytechnic Institute — The mechanics of random fiber networks which are not bonded or cross-linked but are subjected to topological constrains imposed by the excluded volume of the fibers is studied by means of a computational model. The fibers do not cross, have linear constitutive behavior in the axial and bending deformation modes and interact with each other frictionally. The response to hydrostatic (compaction) and shear loading is studied with focus on the emergence of hysteretic behavior and texture. The role of friction and of fiber aspect ratio in defining the onset of stiffness percolation, the response to large deformations and the overall dissipation is analyzed.

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