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Autore	Meyer Nils
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Sommario/riassunto	Sheet Molding Compounds (SMC) are discontinuous fiber reinforced composites that are widely applied due to their ability to realize composite parts with long fibers at low cost. A novel Direct Bundle Simulation (DBS) method is proposed in this work to enable a direct simulation at component scale utilizing the observation that fiber bundles often remain in a bundled configuration during SMC compression molding.