On the Serrin-type condition for local weak solutions to the generalized Newtonian fluid with shear thickening viscosity

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We consider a weak solution to the equations of shear thickening incompressible fluid. We prove that under a Serrin-type condition imposed on the velocity field u, the field enjoys a higher integrability properties, which ensures that u is strong. In particular, we prove that for powers law $q \geq \frac{11}{5}$ any weak solution is strong.

This is a joint work with Jörg Wolf.