

# Methods in Applied Nonlinear Analysis

## Existence of solutions for equations of motion of a falling inextensible triod

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We study the overdamped dynamics of an inextensible network that has the shape of a triod, i.e., consists of three inextensible strings that have a junction at a common moving point, and the opposite ends are fixed. We introduce an approximating system that can be viewed as a gradient flow. We show global existence of solutions to the approximating system, and consequently the weak solvability of the original problem follows by careful analysis of uniform a priori bounds. This is a joint work with Dmitry Vorotnikov and is based on the preprint [1].

## References

- [1] TELCIYAN, A., VOROTNIKOV, D., *Overdamped Dynamics of a Falling Inextensible Network: Existence of Solutions*, Preprint arXiv:2201.05547 [math.AP] (2022).