

1. Record Nr.	UNINA9910522958503321
Autore	Ammari Kais
Titolo	Stability of Elastic Multi-Link Structures // by Kaïs Ammari, Farhat Shel
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	3-030-86351-4
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (146 pages)
Collana	SpringerBriefs in Mathematics, , 2191-8201
Disciplina	515.353 515.392
Soggetti	Differential equations Dynamics Group theory Graph theory Differential Equations Dynamical Systems Group Theory and Generalizations Graph Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Preliminaries -- 2. Exponential stability of a network of elastic and thermoelastic materials -- 3. Exponential stability of a network of beams -- 4. Stability of a tree-shaped network of strings and beams -- 5. Feedback stabilization of a simplified model of fluid-structure interaction on a tree -- 6. Stability of a graph of strings with local Kelvin-Voigt damping -- Bibliography. .
Sommario/riassunto	This brief investigates the asymptotic behavior of some PDEs on networks. The structures considered consist of finitely interconnected flexible elements such as strings and beams (or combinations thereof), distributed along a planar network. Such study is motivated by the need for engineers to eliminate vibrations in some dynamical structures consisting of elastic bodies, coupled in the form of chain or graph such as pipelines and bridges. There are other complicated examples in the automotive industry, aircraft and space vehicles, containing rather than

strings and beams, plates and shells. These multi-body structures are often complicated, and the mathematical models describing their evolution are quite complex. For the sake of simplicity, this volume considers only 1-d networks.
