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Krupa, M. (A-TUWN-MC); **Poth, W.** (A-TUWN-MC); **Schagerl, M.** (A-TUWN-MC); **Steindl, A.** (A-TUWN-MC); **Steiner, W.** (A-TUWN-MC); **Troger, H.** (A-TUWN-MC); **Wiedermann, G.** (A-TUWN-MC)

Modelling, dynamics and control of tethered satellite systems. (English summary)

Nonlinear Dynam. **43** (2006), *no. 1-2,* 73–96.

The concept of tethered satellite systems (TSS), that is, two or more satellites in orbit connected by thin long cables, is probably the most innovative concept of space flight at the end of the 20th century because there exist numerous important applications ranging from energy production, making use of the magnetic field of the Earth, to orbit raising or deorbiting of satellites just by cutting the tether. Tethered satellite systems pose quite challenging problems concerning their modeling, derivation of the equations of motion, numerical simulation of their dynamics, deciding on stability of relative equilibria provided the system moves in a circular orbit around the Earth and the occurrence of chaotic dynamics. Moreover, for the processes of deployment or retrieval of one satellite from or to another satellite certain control strategies, for example time or energy optimal control, are necessary. All these problems are considered in this paper.

Reviewed by *P. Rochus* (Liège)

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