



**2<sup>nd</sup> International Meeting on  
Differential Equations and Applications**  
**March 9-11, 2026 • Madrid (Spain)**

**Existence, regularization and upper-semicontinuity  
of uniform attractors for a nonautonomous  
semilinear evolution equation of second order**

**Vinicius Tavares Azevedo**

Federal University of São Carlos (Brazil)

We investigate the forward dynamics of a nonautonomous semilinear wave-type evolution problem, which models propagation phenomena in nonlinear elastic rods and ion-acoustic waves. We establish global well-posedness and prove the existence of a family of uniform attractors under appropriate growth and dissipativity conditions. Additionally, we demonstrate upper semicontinuity in a suitable space and derive regularity results in a more refined space. Finally, we characterize the uniform attractor through kernel sections for the problem under consideration.

## References

- [1] V. T. Azevedo, E. M. Bonotto, A. C. Cunha and M. J. Nascimento, Existence, regularization and upper-semicontinuity of uniform attractors for a nonautonomous semilinear evolution equation of second order, *Mathematische Annalen*, **392**, 4 (2025), 5639–5688.