

Seminario de Ecuaciones Diferenciales y Análisis Numérico  
Universidad de Buenos Aires - Argentina  
17 de Abril de 2019  
Ciudad Universitaria - Pabellón I  
Departamento de Matemática  
Segundo Piso - Sala de Conferencias del DM-IMAS, 11:00.

## My trajectory in Argentina: A mathematical journey and other short stories.

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In this Lecture we will address some recent trends in nonlinear PDEs, which were developed in the recent years in the UBA's Math. Department in collaboration (mainly) with Argentinian co-authors.

The insights behind the exposition consist of explaining their mathematical relevance, intrinsic difficulties in being overcome and applications in other classes of problems.

In the "Endgame" (of Lecture) we will present new directions and mathematical expectations for the next years.

### References

- [1] M.D. Amaral, J.V. da Silva, G.C. Ricarte & R. Teymurazyan, *Sharp regularity estimates for quasilinear evolution equations*. To appear in **Israel J. Math.** (2019) DOI: <https://doi.org/10.1007/s11856-019-1842-1>.
- [2] J.V. da Silva, *Geometric  $C^{1+\alpha}$  regularity estimates for nonlinear evolution model*. **Nonlinear Anal.** 184 (2019), 95-115.
- [3] J.V. da Silva, P. Ochoa & A. Silva, *Regularity for degenerate evolution equations with strong absorption*. **J. Differential Equations** 264 (2018), no. 12, 7270-7293.
- [4] J.V. da Silva & J.D. Rossi, *The limit as  $p \rightarrow \infty$  in free boundary problems with fractional  $p$ -Laplacians*. **Trans. Amer. Math. Soc.** 371 (2019), no. 4, 2739-2769.
- [5] J.V. da Silva, J. Rossi & A. Salort, *Regularity properties for  $p$ -dead core problems and their asymptotic limit as  $p \rightarrow \infty$* . **J. London Math. Soc.** (2) 99 (2019) 69-96.
- [6] J.V. da Silva & A. Salort, *Sharp regularity estimates for quasi-linear elliptic dead core problems and applications*. **Calc. Var. Partial Differential Equations** 57 (2018), no. 3, 57: 83.
- [7] J.V. da Silva & E.V. Teixeira, *Sharp regularity estimates for second order fully nonlinear parabolic equations*. **Math. Ann.** 369 (2017), no. 3-4, 1623-1648.

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