

A new approach to singularities in solid mechanics via a notion of generalized Jacobian determinant

Riccardo Scala¹, Nicolas Van Goethem³ and Lucia De Luca²

¹*Università degli Studi di Siena, Italy*

²*CNR, Rome, Italy*

³*Universidade de Lisboa, Portugal*

Corresponding/Presenting author: riccardo.scala@unisi.it

Talk Abstract

We introduce a notion of Jacobian determinant for some R^2 -valued maps of bounded variation on a bounded planar domain. This notion extends the Distributional Determinant and allows for some applications in solid mechanics. We will focus on classical singularities appearing in Ginzburg-Landau model and dislocations mechanics. This is a joint work with Nicolas Van Goethem and Lucia De Luca.

Keywords: Singularities in solid mechanics, Jacobian determinant, dislocations, Ginzburg-Landau model.

Acknowledgements We thank the organizers for the invitation.

References

- [1] De Luca, L. and Scala, R. and Van Goethem, N., A new approach to singularities in solid mechanics via a notion of generalized Jacobian determinant, In preparation.