# Marco Veranda

Consorzio RFX
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## Research field

MHD theory and nonlinear numerical modeling of fusion plasmas, in particular nonlinear 3D MHD for reversed-field pinch, tokamak and stellarator configurations (SpeCyl and PIXIE3D). Exploitation and development (verification & validation) of advanced numerical tools for fusion plasmas with a particular interest in RFP helical states. Stochastic transport/magnetic topology studies.

The figure represents a3D rendering of the quasi-helical state.

## Employment and activities

- May 2016 - today Researcher at Consorzio RFX, Padova.
- May 2014–May 2016 EUROFUSION fellowship at Consorzio RFX, Padova.
- October 2013–May 2014 Post-Doctoral Grant, Università degli Studi di Padova, performed at Consorzio RFX, Padova.
- 2010–2012 Joint Research Doctorate in Fusion Science and Engineering, Università degli Studi di Padova, IST Lisboa, Performed at: Consorzio RFX –Padova

## Education

- 2009 Master Degree in Physics, Università degli studi di Padova, performed at: Consorzio RFX - Padova. Rated: 110/110 cum laude.
- 2007 Academic Degree in Physics, Università degli studi di Padova, performed at: Consorzio RFX - Padova. Rated: 109/110.

## Outreach summary

- 25+ papers in peer-reviewed journals (Nuclear Fusion, Physics of Plasmas, Physical Review Letter);
- 10+ contributions to international conferences, 3 invited talks.
- Scientific communication activities: speaker at “Sole 24 Ore Nova Days”, organized by the main Italian economical newspaper “Il Sole 24 Ore”, Padova, October 26th 2018.

## Some relevant publications

- M Veranda, D Bonfiglio, S Cappello, G di Giannatale, DF Escande, “Helically self-organized pinches: dynamical regimes and magnetic chaos healing” Nuclear Fusion **2020**
- M Veranda, S Cappello, D Bonfiglio, DF Escande, A Kryzhanovskyy, “Magnetic reconnection in three-dimensional quasi-helical pinches” Rendiconti Lincei. Scienze Fisiche e Naturali, **2020**
- M. Veranda, D. Bonfiglio, S. Cappello, et al, “Magnetohydrodynamics modelling successfully predicts new helical states in reversed-field pinch fusion plasmas”, Nuclear Fusion **2017**
- M. Veranda, D. Bonfiglio, S. Cappello, L. Chacón and D. F. Escande, “*Impact of helical boundary conditions on nonlinear 3D magnetohydrodynamic simulations of reversed-field pinch*”, Plasma Physics Controlled Fusion **2013**.
- D. Bonfiglio, M. Veranda, S. Cappello, D. F. Escande and L. Chacón, “*Experimental-like Helical Self-Organization in Reversed-Field Pinch Modeling*”, Physical Review Letters **2013**.
- D. Bonfiglio, M. Veranda, S. Cappello, L. Chacón and G. Spizzo, “*Magnetic chaos healing in the helical reversed-field pinch: indications from the volume-preserving field line tracing code NEMATO*”, Journal of Physics: Conference Series **2010**.