

# New Trends in Onedimensional Dynamics

## Celebrating the 70<sup>th</sup> anniversary of Welington de Melo

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**Title:** Pacman Renormalization and scaling of the Mandelbrot set at Siegel points

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**Abstract:** In the 1980s Branner and Douady discovered a surgery relating various limbs of the Mandelbrot set. We put this surgery in the framework of “Pacman Renormalization Theory” that combines features of quadratic-like and Siegel renormalizations. Siegel renormalization periodic points (constructed by McMullen in the 1990s) can be promoted to pacman renormalization periodic points. We prove that these periodic points are hyperbolic with one-dimensional unstable manifold. As a consequence, we obtain the scaling laws for the centers of satellite components of the Mandelbrot set near the corresponding Siegel parameters. It is a joint work with Dima Dudko and Nikita Selinger.