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ORTHOGONAL GRIDS ON MEANDER-LIKE REGIONS*

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Dedicated to Víctor Pereyra on the occasion of his 70th birthday

Abstract. Lemniscates are level curves of the absolute value of univariate complex polynomials. We consider the approximation of meander-like regions (i.e., regions similar to meandering rivers) by pairs of confocal lemniscates that are stitched together continuously. We look at orthogonal grids on these types of plane regions. The main application is in the area of numerical solution of partial differential equations.

Key words. lemniscate, orthogonal grid, path approximation

AMS subject classifications. 65L50, 65M50, 65N50

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