

# Combinatorics of the principal nest: realization in the quadratic family

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The principal nest is an object introduced in the study of quadratic polynomials without an immediate renormalization. In his doctoral dissertation, R. A. Pérez, expanded the principal nest techniques with the introduction of the frame structure, which has associated a labeled graph. With the frame system, Pérez proved the existence of complex parameters which exhibit return times to the critical point following Fibonacci combinatorics. The existence of a real parameter exhibiting Fibonacci combinatorics was already established in 1991 by Milnor and Lyubich.

In this work we review and explain the construction of the frame system and present the realization theorems found in Pérez dissertation. As our original contribution we propose an alternative to the admissibility conditions, give new examples of combinatorial types, and study the existence of the Jacobsthal combinatorics by a real or complex quadratic polynomial.