SEMICONJUGATE RATIONAL FUNCTIONS AND THEIR RELATIVES

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Let A and B be rational functions on the Riemann sphere. The function B is said to be semiconjugate to the function A if there exists a non-constant rational function X such that

$$(*) \qquad A \circ X = X \circ B.$$

The semiconjugacy condition generalises both the classical conjugacy relation and the commutativity condition. In the talk we present a description of solutions of $(*)$ in terms of orbifolds of non-negative Euler characteristic on the Riemann sphere, and discuss relations of this functional equation with complex dynamics, number theory, and solution of algebraic equations.