DIFFERENTIAL POLYNOMIALS WITH REAL ZEROS

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This is a survey of recent results on the following question: Let f be a real meromorphic function, and $P(f)$ a real differential polynomial of f. What can be said about f if $P(f)$ has only real zeros? The main result is the old conjecture of Wiman recently proved by Bergweiler, Langley and the speaker: if f is a real entire function, and all zeros of ff'' are real, then f is a limit of polynomials with real zeros. Various generalizations of this theorem and open questions will be discussed.