ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

9. Ordinary Differential Equations and Dynamical Systems

1991 MS Classification: 33,34
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On the WKB method and Airy functions.

We consider double asymptotic property of WKB solutions of

$$(*) \qquad \varepsilon^3 y''' - 4\varepsilon x y' - 2y = 0 \quad (|x| \leq x_0,\ 0 < \varepsilon \leq \varepsilon_0).$$

When $\varepsilon = 1$, solutions of $(*)$ are given by products of the Airy functions: $Ai^2(x), Ai(x)Bi(x), Bi^2(x)$.
We analyze relation between WKB solutions of $(*)$ and Airy functions.

References

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[3] Zwillinger. Handbook of Diff. Eqs. Academic Press.