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An elementary approach of the connection formula for WKB solutions to the Peacey system with a large parameter

We investigate the system of partial differential equations which characterizes the Pearcey integral from the viewpoint of the exact WKB analysis. In this talk, we discribe that the Borel transform of the WKB solutions to the system can be expressed as a linear combination of the branches of an algebraic function of degree 4. As a corollary, we see that the WKB solutions are resurgent functions. Furthermore, we provide several connection formulas for the system under suitable assumptions.

References

[1] T. Aoki, T. Suzuki, S. Uchida, *An elementary proof of the Voros connection formula for WKB solutions to the Airy equation with a large parameter*, to appear in RIMS Kôkyûroku Bessatsu.

[2] T. Aoki, T. Suzuki, S. Uchida, *The Borel transform of the WKB solution to the Pearcey system*, submitted, available at https://arxiv.org/abs/2303.02694.