

Complex Analysis Project Proposal

Kutta–Joukowski Theorem

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I'm planning to do my project on the Kutta–Joukowski theorem, a result in aerodynamics. The theorem gives a formula for the lift provided by an arbitrary cylindrical body in an airflow by characterizing the circulation of fluid around the body in terms of the line integral of around the body.

I am planning to work on this alone.

Reference [1] gives a comprehensive treatment of the physics involved, while Silverman [2] gives (I believe¹) a mathematically complete derivation.

References

- [1] Jr. John D. Anderson. *Fundamentals of Aerodynamics*. McGraw-Hill, Boston, 2001.
- [2] Richard A. Silverman. *Complex Analysis with Applications*. Dover, 1984. ISBN 0486647625, 9780486647623.

¹I haven't read it yet, I have been more focused on the physics because I am less familiar with that aspect.