Review of: "Analysis of the Spread of Covid-19 via Atangana-Baleanu Fractional Derivatives"

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Review: **Analysis of the Spread of Covid-19 via Atangana-Baleanu Fractional Derivatives**

The paper explores the spread of an epidemic using Atangana-Baleanu Fractional Derivatives, providing a comprehensive mathematical analysis and formulation of a fractional model for the epidemic. The authors rigorously establish the existence and uniqueness of the solution for the proposed model, which is crucial for ensuring the validity of the theoretical framework.

Furthermore, the study delves into investigating the existence of disease-free equilibrium and analyzes its stability properties. To validate the theoretical findings, the authors employ a numerical scheme for the fractional model and present simulation results. By demonstrating various simulation scenarios, the study offers valuable guidance for policymakers and public health officials in devising strategies to mitigate the spread of the epidemic.

Overall, the paper contributes to the field by combining theoretical analysis with empirical validation, providing a comprehensive framework for understanding and controlling epidemic dynamics. The findings presented in this study hold significance for both academia and practical applications, offering valuable insights for combating infectious diseases.

But the following questions should be addressed

1. The assumption for model formulation is not stated; for instance, there is no recruitment rate for susceptibles. Why?
2. The disease-free equilibrium point is stated, but what about the endemic?
3. Which numerical schemes and software are used?