



# EFFECTS OF IMPROVED CAUCHY-SCHWARZ INEQUALITY ON BEREZIN RADIUS INEQUALITIES

MEHMET GÜRDAL\*

Department of Mathematics,  
Suleyman Demirel University, 32260, Isparta, Turkey  
(E-mail: [gurdalmehmet@sdu.edu.tr](mailto:gurdalmehmet@sdu.edu.tr))

and

ÖMER KIŞI

Department of Mathematics,  
Bartın University, Bartın, Turkey  
(E-mail: [okisi@bartin.edu.tr](mailto:okisi@bartin.edu.tr))

**Abstract.** In this paper, we derive new and improved upper bounds for the Berezin number using an improvement of the Cauchy-Schwarz inequality recently established by Nayak [[arXiv:https://doi.org/10.48550/arXiv.2405.19698](https://doi.org/10.48550/arXiv.2405.19698)].

---

<sup>1</sup>Corresponding author

Communicated by Editors; Received August 8, 2024

AMS Subject Classification: 40A30, 47A63.

Keywords: Berezin symbol, Berezin number; Cauchy-Schwarz inequality.