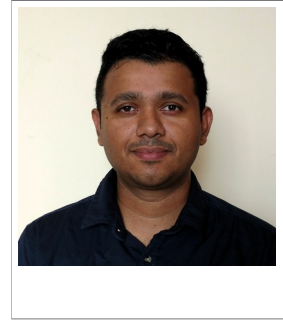




## Sarath Sasi

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### Research Interests

- Partial differential equations
- Nonlinear analysis

### Brief Summary of Research

Sarath's area of research is nonlinear boundary value problems. Currently his work is focused on two topics in quasilinear elliptic partial differential equations:

- (i) The eigenvalue problem for the  $p$ -Laplacian operator on a ball,
- (ii) The weighted eigenvalue problem for the  $p$ -Laplacian operator in the exterior domain.

He is also interested in spatial ecology, particularly in reaction-diffusion models that have been used to analyze the existence of alternate stable states in ecosystems. He has published 10 papers in refereed international journals and is presently supervising a PhD student.

Recent Publications (Full list of publications: <https://iitpkd.ac.in/publications/115>)

- Anoop T. V., Vladimir Bobkov and **Sarath Sasi**, "On the strict monotonicity of the first eigenvalue of the  $p$ -Laplacian on annuli," *Transactions of the American Mathematical Society* 370 7181-7199 (2018)
- Anoop T. V., Pavel Drábek and **Sarath Sasi**, "On the structure of the second eigenfunctions of the  $p$ -Laplacian on a ball" *Proceedings of the American Mathematical Society* 144 2503-2512 (2016)
- Anoop T. V., Pavel Drábek, Lakshmi Sankar and **Sarath Sasi**. "Antimaximum principle in exterior domains", *Nonlinear Analysis: Theory, Methods and Analysis* 130 241-254 (2016)
- Anoop T. V., Pavel Drábek and **Sarath Sasi**, "Weighted quasilinear eigenvalue problems in exterior domains", *Calculus of Variations and Partial Differential Equations* 53 961-975 (2015)
- Lakshmi Sankar, **Sarath Sasi** and R. Shivaji, "Semipositone Problems with Falling Zeros on Exterior Domains", *Journal of Mathematical Analysis and Applications* 401 (1) 146-153 (2013)