IIT PALAKKAD

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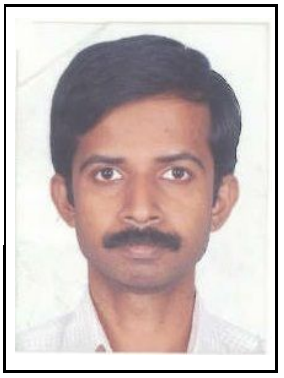

Research Interests

- Several Complex Variables

Brief Summary of Research:

Balakumar's work has centered around 'mapping problems in multidimensional complex analysis'. The question of determining the existence of a biholomorphic mapping between domains in C^n, is a widely open problem of fundamental interest in Several Complex Variables, giving rise to several sub-problems. Some important sub-problems are: (i) boundary behaviour of biholomorphic and more generally, proper holomorphic mappings and the associated problem of regularity of Cauchy-Riemann maps (works 4 & 6) , (ii) classifying domains by their automorphism group (work 5) (iii) study of metrics which are biholomorphically invariant (works 1 to 4).

Publications:

1) Remarks on the higher dimensional Suita conjecture,
G. P. Balakumar, Diganta Borah, Prachi Mahajan and Kaushal Verma,
Proc. Amer. Math. Soc. in press, to appear (2019),

2) Analysing the Wu metric on a class of eggs in Cn - I,
G. P. Balakumar, P. Mahajan; Proc. Indian Acad. Sci. Math. Sci. 127, 323-335 (2017),

3) Analysing the Wu metric on a class of eggs in Cn - II,
G. P. Balakumar, P. Mahajan; Proc. Indian Acad. Sci. Math. Sci. 127, 463-470 (2017),

4) Bounds for invariant distances on pseudoconvex Levi corank one domains and applications, G. P. Balakumar, P. Mahajan, K. Verma;
Ann. Fac. Sci. Toulouse Math. 24, 281 -- 388 (2015),

5) Model domains in C3 with abelian automorphism group, G. P. Balakumar;
Complex Var. Elliptic Equ. 59, 369–411 (2014).

6) Some regularity theorems for CR mappings, G. P. Balakumar, K. Verma;
Math. Z, 274, 117–144 (2013).

Externally-Funded Projects: DST-INSPIRE Faculty Fellowship.