

Biodata of S. Kumaresan

Name : Dr. S. Kumaresan
Sex : Male
Date of Birth : April 10, 1950
Qualification : B.Sc. (Annamalai, 1971), (First Rank)
: M.Sc.(Annamalai, 1973), (First Rank)
: Ph.D.(TIFR, Bombay, 1980)
Designation : Professor
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Current Interest: Pedagogy, Global Analysis
: Modern Differential Geometry
: PDE Problems in geometry.
Positions held : Tata Institute, Bombay
Places Visited : Institute for Advanced Study, Princeton, ICTP,
Trieste, USSR Academy of Sciences, Moscow
and Leningrad, Various leading institutions in
India.

I am the convener of a National level programme called “Mathematics Training and Talent Search Programme” (MTTS, in short) since 1993 for undergraduate students. This activity is supported by the National Board for Higher Mathematics. The aim of this programme is to attract talented young students towards mathematics by giving them a better perspective of modern mathematics than given at the college or university level. This is achieved by adopting newer methods of teaching in which the participation by the students is the most important ingredient. The camps are held at three places in the country catering to 200+ undergraduate students every year. A complete history and details of this programme can be seen at its homepage:

<http://math.mu.ac.in/mtts/>

This programme has made a great impact on the mathematical scene in India. To quote a colleague from Tata Institute, India, “Earlier, when we interviewed candidates for Ph.D., we would be happy to find 2 or 3 out of 100. Due to your efforts, we now interview about 30 to 40, none of them is a dud, we could see that they are confident to tackle unseen problems and have a clear understanding of the concepts and all of them can be traced back to MTTS”. Apart from these I am frequently invited by various institutions for lectures and have been in the Organizing Committee of many National and International Conferences in India.

I have given more than 150 lectures to popularise mathematics among students of various colleges across the country.

A Partial List of Work done by S. Kumaresan

Results of 1–4 have been incorporated in books, especially, the result in 2) had and still has a wide-reaching impact. Results of 5)–7) are also referred to by experts in the field for the geometric approach.

1) (with Adimurthi) *On the Singular Support of Distributions and Fourier Transform on Symmetric Space*, Annali Scuola Norm. Sup. **6**, 143-151 (1979)

2) *On the Canonical k -Types in the irreducible Unitary g -modules with Non-Zero Relative Cohomology*, Inventiones Math., **59**, 1-11 (1980)

3) (with Akhil Ranjan) *On invariant convex cones in simple Lie algebras*, Proc.Indian Acad.Sci, **91** 167-182 (1982)

4) (with V. V. Deodhar) *A Finiteness theorem for Affine Lie algebras*. *Journal of Algebra*, **103** 403-426 (1986)

5) Abhijit Champanerkar, Ajit Kumar and S. Kumaresan: *Classification of Surfaces via Morse Theory*, Expositions Maths. 18-20, 037-074, 2000

6) S.Kumaresan and Jyotsna Prajapat: *Analogue of Serrin’s result in hyperbolic and spherical spaces*, Duke Mathematical Journal(1998) Vol. 91, pp 17-28.

7) S.Kumaresan: *Analogue of Gidas-Ni Nirenberg result in hyperbolic and spherical spaces*, (with Jyotsna Prajapat), Rend. Istit. Mat.Trieste 107 - 112(1998).

Books

I am very much concerned with writing quality text-books at undergraduate and graduate levels. The books mentioned below are very much appreciated by students and teachers alike.

1) S. Kumaresan, *Linear Algebra- A Geometric Approach*, Prentice Hall of India, 1999.

2) S. Kumaresan, *A Course in Differential Geometry and Lie Groups*, TRIM Series, Hindustan Book Agency, 2001.

3) S. Kumaresan, *Short Courses in Analysis*, University Press, Hyderabad, 2003.