

***Ramanujan Mathematical Society  
29th Annual Conference***

IISER, Pune (23-27 June, 2014)

**Abstracts of Plenary Talks**

Hyman Bass

*University of Michigan, Ann Arbor, MI 48109-1259, USA*

Title: Fair Partitions with Fewest Pieces, and Isoperimetric Square Tilings

Abstract

Let  $(s_1, s_2, \dots, s_n)$  be a sequence of integers  $> 0$ . Suppose that we cut a cake into  $p$  pieces so that, for each  $j = 1, 2, \dots, n$ , we are able, with those  $p$  pieces, to distribute equal shares to each of  $s_j$  students. What is the minimum  $p$  for which this can be done? I shall show a solution to this for  $n = 2$ , with an application to square tilings of rectangles with minimum perimeter. For  $n > 2$ , I will describe partial results, but the problem remains open.

Govindan Rangarajan

*Department of Mathematics, Indian Institute of Science, Bangalore 560 012*

Title : Mathematical Biology: Examples from Neuroscience and Population Biology

Abstract: We start with a brief introduction to the area of mathematical biology. Then we move on to specific problems that we have worked on. In particular, we will look at applications of Granger causality in neuroscience and nonlinear dynamics in population biology.

Katsuhiro Shiohama

*Dept of Information and Communication Engineering,  
Fukuoka Institute of Technology, Wajiro-Higashi, Fukuoka 81100180, Japan*

Title: Riemannian Finsler Geometry in the Large

Abstract:

Dinesh Thakur

*Dept. Math., U. Rochester, Rochester, NY 14627-0138, USA*

Title: Encounters with Ramanujan's mathematics

Abstract: I will describe some interesting encounters I had with Ramanujan's mathematics.

Steven H. Weintraub

*Dept. of Math., Lehigh University, Bethlehem, PA 18015-3174, USA*

Title: A survey of some arithmetic questions in the representation theory of finite groups.

Abstract: We will survey results on and issues related to the question of the field of definition of representations of finite groups.