Israel Mathematical Union (RA)

Prof. Alek Vainshtein, President
Dr. Yuval Ginosar , Secretary
Dr. Anna Melnikov, Treasurer

Israel Mathematical Union האגוד הישראלי למתמטיקה

האיגוד הישראלי למתמטיקה (ע"ר)

פרופ׳ אלק ויינשטיין, נשיא
ד"ר יובל גנוסר, מזכיר
ד"ר אנה מלניקוב, גזברית

12 מאי 2013

May 12, 2013

פרס ארדש במתמטיקה לשנת תשע"ג

פרס ארדש במתמטיקה לשנת תשע"ג (2013) מוענק לפרופ׳ **עומרי שריג** ממכון ויצמן. נימוקי ועדת הפרס מובאים להלן.

2013 Erdos Prize in Mathematics

The Erdos Prize in Mathematics for the year 2013 is awarded to Prof. **Omri Sarig** from the Weizmann Institute. The prize committee citation follows.

Committee rationale:

Omri is recognized as one of the leading experts in dynamical systems worldwide. He is a diverse mathematician who impacted several different directions in the subject.

Among his many achievements is the construction of a useful symbolic model -- a countable state Markov partition -- to general surface diffeomorphisms with positive topological entropy. While Markov partitions have played an important role in smooth dynamics since the late 1960's, their construction was limited to uniformly hyperbolic dynamical systems; extending these techniques to more general dynamical systems has been a long-term frustrated ambition of many leading experts. Omri's construction of such partitions for general surface diffeomorphisms realizes this central goal, and allowed him to prove in one strike several long-standing conjectures on surface diffeomorphisms, in particular a conjecture of Katok giving a precise lower bound on the number of periodic trajectories for such diffeomorphisms in terms of the topological entropy and a conjecture of Buzzi that there can be at most countably many ergodic measures with maximal entropy (i.e. with the ergodic theoretic entropy equal to the topological entropy).

Another area in which Omri has played a decisive part has been in the study of the dynamics of the horocycle flow on infinite area geometric infinite surfaces. The horocycle flow and its rigidity properties is a classical object of study in dynamics. Babillot and Ledrappier made the surprising discovery that for geometrically infinite surfaces this dynamics behaves quite differently than in the geometrically finite case by giving a construction of a continuous family

Israel Mathematical Union (RA)

Prof. Alek Vainshtein, President
Dr. Yuval Ginosar , Secretary
Dr. Anna Melnikov, Treasurer

Israel Mathematical Union האגוד הישראלי למתמטיקה

האיגוד הישראלי למתמטיקה (ע״ר)

פרופ׳ אלק ויינשטיין, נשיא
ד״ר יובל גנוסר, מזכיר
ד״ר אנה מלניקוב, גזברית

of ergodic invariant measures for a certain class of such surfaces. Babillot and Ledrappier conjectured that this construction accounts for all invariant measures. This conjecture was proved by Omri, who later went on to study with Ledrappier much more general family of surfaces.

These two achievements are highlights of an extensive, diverse, and far-reaching research program. In his work Omri explores mathematical paths he sets himself; his work is both deep and original.

Prof. Louis H. Rowen,
Chairman of the Prize Committee

Prof. Alek Vainshtein,
President of the Union