Research Networking Programmes

Short Visit Grant ☒ or Exchange Visit Grant ☐

(please tick the relevant box)

Scientific Report

The scientific report (WORD or PDF file – maximum of eight A4 pages) should be submitted online <u>within one month of the event</u>. It will be published on the ESF website.

<u>*Proposal Title*</u>: Small Positive Loops of Contactomorphisms

<u>*Application Reference N°*</u>:   6385

1) **Purpose of the visit**

This scientific report concerns the short visit of Sheila Sandon to ICMAT Madrid on January 27 and 28, 2014 in order to pursue a collaboration with Roger Casals and Francisco Presas

2) **Description of the work carried out during the visit**

The object of the collaboration is the question about non-existence on overtwisted contact manifolds of positive loops of contactmorphisms that are generated by a C^0-small contact Hamiltonian. In previous discussions we had found a method to answer this question in the case when the first Chern class of the contact structure vanishes, and during the visit of Sandon to Madrid we worked on extending this result to the general case and we started writing down a research paper on this.

3) **Description of the main results obtained**

We proved that on closed overtwisted contact 3-manifolds there are no positive loops of contactomorphisms that are generated by a C^0-small contact Hamiltonian.

4) **Future collaboration with host institution (if applicable)**

5) **Projected publications / articles resulting or to result from the grant** *(ESF must be acknowledged in publications resulting from the grantee's work in relation with the grant)*

We are planning to post a preprint on this result in the arXiv in the next few weeks, and to later submitted it for publication in some international journal.

6) **Other comments (if any)**