

Ana Rechtman (Université de Strasbourg): Broken books and Reeb dynamics in dimension 3

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Giroux's correspondance gives, in particular, for every contact structure on a closed 3-manifold an adapted open book decomposition. Hence, it exists a Reeb vector that is tangent to the binding and transverse to the interior of the pages. For this vector field, each page is a Birkhoff section and the dynamics of the flow can be studied from the first return map. This correspondence is unsatisfactory when one wants to study all the Reeb vector fields associated to a contact structure.

In collaboration with V. Colin and P. Dehornoy, we proved that every non-degenerate Reeb vector field on a closed 3-manifold is adapted to a broken book (a generalisation of an open book). This construction gives a system of transverse surfaces with boundary and allows to establish results on the dynamics of the vector field.