

様式 2 帰国報告書 (ITP Research Report)

※以下の項目が含まれていれば形式は自由です。(ただし、tex 等で作成した場合は pdf で提出して下さい)

Research Report of JSPS-ITP

(The international sending-elevating project for young mathematicians based on singularity, topology and mathematical analysis: Hokudai model)

Name: Wataru Yukuno

Name of ITP Partner Institute: Institute of Mathematics of the Polish Academy of Sciences

Period of ITP-Stay: 11/5/2011-24/5/2011

Research Report:

Thanks to the support from ITP project of Hokkaido University, I was able to participate in “School on Generic Singularities in Geometry” at the Banach Center in Warsaw and “Workshop on Singularities in Geometry and Applications” in Będlewo.

On May 13, at “School on Generic Singularities in Geometry”, because I had a chance to give a lecture, I explained my study for about 30 minutes. The title of talk was “The estimation of a subriemannian ball on Carnot-Carathéodory distance and its application”. In this lecture, by using the Carnot-Carathéodory distance canonically defined by the nilpotent approximated vector-field system, I talked about a matter of the estimation of subriemannian ball on Carnot-Carathéodory distance, that is the ball-box theorem. As its application, I introduced Mitchell's measure theorem, which is the formula for calculating the local Hausdorff dimension near a regular point in subriemannian manifold with a Caront-Carathéodry metric. By using this theorem, I introduced the result of the computation of the local Hausdorff dimension near a regular point for some concrete distributions.

On May 17, in “Workshop on Singularities in Geometry and Applications”, I give a poster presentation, which title is “Nilpotent approximation of bracket generating family of vector fields, and its application”. During the presentation, I received a lot of suggestion about it.

Finally, thanks to this ITP support, I went to Poland two years ago and I was able to participate in the workshop held in Poland twice. I was able to have an opportunity to interact with many foreign mathematicians. I sincerely appreciate this ITP support.