

様式 2 帰国報告書 (ITP Research Report)

Research Report of JSPS-ITP

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

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Research Report:

I visited Kazimierz Dolny, Poland to participate in Banach Center Symposium "Geometric Singularity Theory" Polish-Japanese Singularity Theory Working Days. I talked at the workshop. The title of my talk was "On implicit second order PDE of a scalar function on a plane via differential systems". I received many useful advises and encouragements from the participant of the workshop after my talk.

Piotr Mormul, who is a specialist of the study of singularity in monster Goursat manifold, was interested in my research. I discussed with him during the workshop. Our main research field is the theory of differential systems which study differential equations geometrically, by using subbundles in tangent bundle on manifolds. The theory originated from E.Cartan and was studied by Darboux, Engel, Goursat, Lie, etc. They study the theory under the "regularity" assumption. But, we are interested in singularities of differential systems (without the "regularity" assumption), because it is found that there are relationships between singularities of differential systems and the optimal control theory, recently. Especially, precise definition of singularities of differential systems that is one of the most important problems is obtained by our discussion.

On the other hand, for master students and doctor students who took part in an international symposium for the first time, I illustrated how to book airplane tickets, how to discuss with foreign people and how to stay at a foreign country, etc.

Finally, I would like to express my gratitude to this ITP program.