NAKRYCIA I IZOMETRIE DLA METRYKI KOBAYASHIEGO NA PODSTAWIE PRACY J.-P. VIGUÉ

The aim of this talk is to prove the following theorems:

Theorem 1 (see [Vig01]). *Let M_1 be a taut connected complex manifold of dimension n. Let M_2 be a connected complex manifold of same dimension n such that the universal covering space of M_2 is biholomorphic to a strictly convex bounded domain in $\mathbb{C}^n$. Let $f \in \mathcal{O}(M_1, M_2)$ be a Kobayashi-Royden isometry at a point $a \in M_1$. Then f is a covering map.*

Theorem 2 (see [Vig01]). *Let M_1 and M_2 be connected complex manifolds of same dimension n such that the universal covering spaces of M_1 and M_2 are biholomorphic to convex bounded domains in $\mathbb{C}^n$. Let $f \in \mathcal{O}(M_1, M_2)$ be a Kobayashi-Royden isometry at a point $a \in M_1$. Then f is a covering map.*

We use basic properties of Caratheodory and Kobayashi pseudometrics and earlier results of J.-P. Vigué and I. Graham:

Theorem 3 (see [Gra]). *Suppose M is a taut complex manifold of dimension n. Suppose Ω is a strictly convex bounded domain in $\mathbb{C}^n$. Suppose $F : M \to \Omega$ is a holomorphic mapping which is a Kobayashi-Royden isometry at a point $p \in M$. Then F is a biholomorphism.*

Theorem 4 (see [Vig84]). *Let Ω be a bounded convex domain in $\mathbb{C}^n$ and let M be a complex manifold on which a Carathéodory-Reiffen pseudodistance is a distance. Suppose $F : \Omega \to M$ is a holomorphic mapping which is a Carathéodory-Reiffen isometry at a point $p \in \Omega$. Then F is a biholomorphism.*

References

[Gra] I. Graham, *Holomorphic mappings into strictly convex domains which are Kobayashi isometries at one point*, Proc. Amer. Math. Soc. 105 (1989), 917-921.

[Vig84] J. P. Vigué, *Caractérisation des automorphismes analytiques d'un domaine convexe borné*, C. R. Acad. Sci. Paris 299 (1984), 101-104.

[Vig01] J.P. Vigué, *Revêtements et isométries pour la métrique infinitésimale de Kobayashi*, Proc. Amer. Math. Soc. 129 (2001), 3279-3284.