

# Slant Geometry of Spacelike Hypersurfaces in the Lightcone with respect to the $\phi$ -Hyperbolic Duals

Shyuichi Izumiya<sup>1</sup>, Handan Yıldırım<sup>2</sup>

September 6~9, 2011

Emails: [izumiya@math.sci.hokudai.ac.jp](mailto:izumiya@math.sci.hokudai.ac.jp)<sup>1</sup>, [handanyildirim@istanbul.edu.tr](mailto:handanyildirim@istanbul.edu.tr)<sup>2</sup>

One-parameter families of Legendrian dualities which are the extensions of four dualities obtained in [5] for pseudo-spheres in Lorentz-Minkowski Space were given in [6]. In this talk, as an application of such extensions, a new extrinsic differential geometry on spacelike hypersurfaces in the lightcone is constructed with respect to the  $\phi$ -Hyperbolic Duals [7].

## References

- [1] V. I. Arnol'd, S. M. Gusein-Zade and A. N. Varchenko, *Singularities of Differentiable Maps*, Vol. I, Birkhäuser, 1986.
- [2] M. Asayama, S. Izumiya, A. Tamaoki and H. Yıldırım, Slant geometry of spacelike hypersurfaces in Hyperbolic space and de Sitter space, *Revista Matemática Iberoamericana*, accepted, (2011).
- [3] A. C. Asperti and M. Dajczer, Conformally flat Riemannian manifolds as hypersurfaces of the lightcone, *Canad. Math. Bull.* **32** (1989), 281–285.
- [4] L. Chen and S. Izumiya, A mandala of Legendrian dualities for pseudo-spheres in semi-Euclidean space, *Proceedings of the Japan Academy* **85**, Ser. A, (2009), 49–54.
- [5] S. Izumiya, Legendrian dualities and spacelike hypersurfaces in the lightcone, *Moscow Mathematical Journal* **9** (2009), 325–357.
- [6] S. Izumiya and H. Yıldırım, Extensions of the mandala of Legendrian dualities for pseudo-spheres in Lorentz-Minkowski space, *Topology and Its Applications*, accepted, (2011).
- [7] S. Izumiya and H. Yıldırım, Slant geometry of spacelike hypersurfaces in the lightcone, *Journal of the Mathematical Society of Japan*, in press, (2011).