Results of my research

Yu Kawakami

(1) Yu Kawakami, On the totally ramified value number of the Gauss map of minimal surfaces, Proc. Japan Acad. Ser. A Math. Sci, **82** (2006), no. 1, pp 1–3.

In this paper, we define the totally ramified value number ν_g for the Gauss map of a complete minimal surface, and show that there exist algebraic minimal surfaces with $\nu_g = 2.5$. This overthrew an implicit conjecture of the Osserman problem.

(2) Yu Kawakami, Ryoichi Kobayashi and Reiko Miyaoka, The Gauss map of pseudo-algebraic minimal surfaces, to appear in Forum Mathematicum, math.DG/0511543.

In this paper, we refine Osserman's argument on the exceptional values of the Gauss map of algebraic minimal surfaces. This gives an effective estimate for the number of exceptional values and the totally ramified value number for a wider class of complete minimal surfaces that includes algebraic minimal surfaces. It also provides a new proof of Fujimoto's theorem for this class, which not only simplifies the proof but also reveals the geometric meaning behind it.

(3) Yu Kawakami, The Gauss map of pseudo-algebraic minimal surfaces in $\mathbb{R}^4$, to appear in Mathematische Nachrichten, math.DG/0603320.

In this paper, we prove effective estimates for the number of exceptional values and the totally ramified value number for the Gauss map of pseudo-algebraic minimal surfaces in Euclidean 4-space and give a kind of unicity theorem.

(4) Yu Kawakami, Ramification estimates for the hyperbolic Gauss map, submitted, arXiv:0804.0470.

In this paper, we give the best possible upper bound on the number of exceptional values and totally ramified value number of the hyperbolic Gauss map for pseudo-algebraic Bryant surfaces and some partial results on the Osserman problem for algebraic Bryant surfaces. Moreover, we study the value distribution of the hyperbolic Gauss map for complete constant mean curvature one faces in de Sitter 3-space.

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