

Meeting: 1003, Atlanta, Georgia, SS 34A, AMS Special Session on Algorithmic Algebraic and Analytic Geometry, I

1003-30-360 **Gou Nakamura*** (gou@aitech.ac.jp), Center for General Education, Aichi Institute of Technology, Yakusa-cho, 470-0392 Toyota, Japan. *On the extremal disks embedded in compact Riemann surfaces of genus three.*

Let S be a compact Riemann surface of genus $g \geq 2$ equipped with the hyperbolic metric. Then S is said to be extremal if a disk of radius R_g is isometrically embedded in S , where R_g is the maximal length determined by g . The disk embedded in S is called an extremal disk. Our concern is the number and the position of the extremal disks that can be embedded in S . It was studied when $g \geq 4$ ([1]) and $g = 2$ ([2, 3]). In this talk we shall consider extremal surfaces of $g = 3$, and show that they have at most two extremal disks and that 16 of them (up to conformal equivalence) can admit exactly two.

References

- [1] E. Girono and G. González-Diez, On extremal discs inside compact hyperbolic surfaces, C. R. Acad. Sci. Paris, Sér. I, Math. **329** (1999), no.1, 57–60.
- [2] E. Girono and G. González-Diez, Genus two extremal surfaces: extremal discs, isometries and Weierstrass points, Israel J. Math., **132** (2002), 221–238.
- [3] G. Nakamura, The number of the extremal disks embedded in compact Riemann surfaces of genus two, Sci. Math. Japon., **56** (2002), no. 3, 481–492.

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