

Meeting: 1003, Atlanta, Georgia, SS 9A, AMS-MAA-SIAM Special Session on Research in Mathematics by Undergraduates, I

1003-53-312 **Ivan Corwin, Stephanie Hurder and Vojislav Sesum*** (06vss@williams.edu), 2538 Baxter Hall, Williams College, Williamstown, MA 01267, and **Ya Xu.** *Double Bubbles in Spheres of High Dimension.* Preliminary report.

It is well known that the area-minimizing way to partition \mathbf{S}^n into two given volumes is an $(n-1)$ sphere. The Double Bubble Conjecture says that the area-minimizing way to partition \mathbf{S}^n into three given volumes is a standard double bubble, i.e. three spherical caps meeting at 120 degrees. We prove this conjecture for three nearly equal volumes. (Received September 09, 2004)