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Leonardo DiGiosia, Jahangir Habib, Lea Kenigsberg and Dylanger Pittman*
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In Borell Space*. Preliminary report.

The Double Bubble Theorem says that the least-perimeter way to enclose and separate two prescribed volumes in \mathbb{R}^N is the standard double bubble, consisting of three spherical caps meeting at 120 degrees. We seek the optimal double bubble in Borell Space, \mathbb{R}^N with density e^{r^2} . For $N = 1$ we show that the solution is sometimes two contiguous intervals and sometimes three contiguous intervals. In higher dimensions we think that the solution is sometimes a deformed standard double bubble (tending to a sphere plus bisecting disc for large volumes) and sometimes concentric spheres (e.g. for one volume small and the other large). (Received September 16, 2016)