How to find the boundary of a Metaball?

Metaball function:

Where *n*: Control Ball Count

: Center of *nth* Control Ball

: Radius of *nth* Control Ball

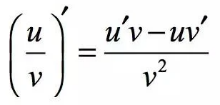
**Definition:**

* Given a threshold *t*, all points that belong to Metaball.
* All points that produce the boundary of the Metaball.

**Thinking:**

1. Initialize a boundary *B* that can obviously cover all Metaball boundaries.
2. For each control points on *B*, find and , where is the Gradient of at point .
3. If , move control point along the direction  
   If , move control point along the direction
4. Repeat step 2,3 until all control point match

**Gradient of Metaball function:**



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