1077-51-2722 **Sam Northshield*** (northssw@plattsburgh.edu). *Ford Circles and Spheres.* Preliminary report.

Given coprime non-negative integers a, b, the circle above and tangent to the x-axis at a/b with radius $1/2b^2$ is called a Ford circle. One can alternatively parameterize these circles:

$$\{[a,b] : (a+b+c)^2 = a^2+b^2+c^2, \gcd(a,b,c)=1\}$$

where $[a,b]$ denotes the circle above and tangent to the x-axis at $(a0+b1)/(a+b)$ with radius $1/2(a+b)$. This generalizes nicely: let P_1, P_2 and P_3 denote the vertices of an equilateral triangle of side length 1, and let $[a,b,c]$ denote the sphere above and tangent to the x,y-plane at $(aP_1+bP_2+cP_3)/(a+b+c)$ with radius $1/2(a+b+c)$. Then the family of spheres

$$\{[a,b,c] : (a+b+c+d)^2 = a^2+b^2+c^2+d^2, \gcd(a,b,c,d)=1\}$$

shares many of the properties of the family of Ford circles. (Received September 22, 2011)