The system of equations

\[ u_1 p_1^2 + \ldots + u_s p_s^2 = 0 \]
\[ v_1 p_1^3 + \ldots + v_s p_s^3 = 0 \]

has prime solutions \((p_1, \ldots, p_s)\) for \(s \geq 13\), assuming that the system has solutions modulo each prime \(p\). This is proved via the Hardy-Littlewood circle method, with the main ingredients in the proof being Wooley’s work on the corresponding system over the integers [?] and results on Vinogradov’s mean value theorem. Additionally, a set of sufficient conditions for the local solvability is given: If both equations are solvable modulo 2, the quadratic equation is solvable modulo 3, and at least 7 of each of \(u_i, v_i\) are not zero modulo \(p\) for each prime \(p\), then the system has solutions modulo each prime \(p\). (Received September 17, 2019)