# FLT: Fermat's Last Triangle

Abstract- The unweighted total distance location problem, as stated by Fermat, is to find a point X in the plane that minimizes the sum of the Euclidean distances from X to three given points P1, P2, P3. The weighted total distance problem assumes a positive weight wi associated with each given point and seeks the point X that minimizes the total weighted distance to the three points. A geometrical solution and geometrical dual was discovered by Toricelli and Simpon for the unweighted problem. This paper extends the geometrical solution and dual to the weighted problem. A proof of the geometrical solution is offered in the style of the famous "Hungarian Proof" for the unweighted case.