1117-05-22 **Hui Jiang** (jhuink@163.com), Tianjin, 300071, Peoples Rep of China, **Xueliang Li*** (lxl@nankai.edu.cn), Tianjin, Peoples Rep of China, and **Yingying Zhang** (zyydlwyx@163.com), Tianjin, Peoples Rep of China. *Total proper connection of graphs.*

A path in a total-colored graph is a total proper path if (i) any two adjacent edges on the path differ in color, (ii) any two internal adjacent vertices on the path differ in color, and (iii) any internal vertex of the path differs in color from its incident edges on the path. A total-colored graph is called total proper connected if any two vertices of the graph are connected by a total proper path of the graph. For a connected graph G, the total proper connection number of G, denoted by $tpc(G)$, is defined as the smallest number of colors required to make G total proper connected. These concepts are inspired by the concepts of total rainbow connection of graphs. In this paper, we first determine the value of the total proper connection number $tpc(G)$ for some special graphs G. Secondly, we obtain that $tpc(G) \leq 4$ for any 2-connected graph G and give examples to show that the upper bound is sharp. Furthermore, we prove that $tpc(G) \leq \frac{3n}{\delta+1} + 1$ for a connected graph G with order n and minimum degree δ. (Received December 03, 2015)