1106-05-1361   **Blanche Sonia Ngo Mahop** (`bngomahop@smith.edu`), Department of Mathematics, Smith College, Northampton, MA 01063, and **Daryl Seaver** (`dseaver@smith.edu`), **Jasmine VanExel*** (`jvanexel@smith.edu`), **Katherine Weber** (`kweber@smith.edu`) and **Ruth Haas** (`rhaas@smith.edu`). *Rainbow boxes in grid graphs.* Preliminary report.

We consider the following problem from extremal graph theory. What is the minimum k needed so that for every k coloring of the edges of an $n \times m$ grid there will be a square each of whose edges is a different color? A subgraph each of whose edges receives a different color is often called rainbow, or achromatic. Other authors have considered problems of similar flavor including rainbow matchings and rainbow complete graphs, typically considering these as subgraphs of colored complete graphs. (Received September 12, 2014)