1077-05-2642 **Simone Severini*** (simoseve@gmail.com), University College London, Gower Street, London, England. *An open problem concerned with the combinatorial structure of unitary matrices.*

Let us take a unitary matrix and replace all the non-zero entries with a one. We obtain the adjacency matrix of a graph (possibly directed). We do not have exact characterizations of graphs obtained in this way. I will state the problem, give concrete motivations, and report some partial results. I will focus on the distinction between having real and complex entries. (Received September 22, 2011)