1047-11-286   **Michael Filaseta*** (`filaseta@math.sc.edu`), Mathematics Department, University of South Carolina, Columbia, SC 29208. *Open Problems on Covering Systems.* Preliminary report.

Covering systems of the integers have received some recent attention in the literature. This talk will present a variety of open problems on the subject, some sparked by this recent activity. As an example, one topic to be surveyed is that of Sierpiński numbers, positive odd integers k with the property that $k \cdot 2^n + 1$ is composite for all positive integers n. We will, for example, consider a still open problem posed by P. Erdős to determine whether every such positive integer k can be obtained from an appropriate covering system of the integers. Formulating this more accurately leads to yet other interesting questions. Much of this talk will center on recent results of the speaker obtained with Carrie Finch, Mark Kozek, Charles Nicol and John Selfridge. (Received January 30, 2009)