1135-VL-1518   **Jeff Shriner*** (`jeffrey.shriner@colorado.edu`). *Hardness Results for the Subpower Membership Problem.*

The *subpower membership problem* for a fixed finite algebra $\mathbb{A}$ is the following combinatorial decision problem:

SMP($\mathbb{A}$)

Input: A positive integer m and m-tuples $a_1, \ldots, a_n, b$ in $\mathbb{A}^m$.

Question: Is b in the subalgebra $\langle a_1, \ldots, a_n \rangle$ of $\mathbb{A}^m$ generated by $a_1, \ldots, a_n$?

In this talk, we will discuss conditions in which we can construct algebras $\mathbb{A}$ with 'nice' structural properties for which the problem SMP($\mathbb{A}$) is as hard as possible. (Received September 22, 2017)