1046-11-1007 **Emma Previato*** (ep@bu.edu), Department of Mathematics and Statistics, Boston University, Boston, MA 02215-2411, and **Drue Coles**, Dept of Math., Computer Science, Statistics, Bloomsburg University, Bloomsburg, PA 17815. *Maximal subbundles in coding theory.*

For decoding efficiency in geometric Goppa codes, rank-2 vector bundles (over the curve used in the definition of the code) could be used advantageously. For example, the computational complexity of setting up transition functions for the bundle is $O(mn^2 + l^2mn + n \cdot \text{size}F)$ for a code of length n, while $m + 1$ is the dimension of a space of sections, F is the ideal that defines the curve and a "size" is defined appropriately (T. Bouganis and D. Coles, in *Lecture Notes in Comput. Sci.* **2643**, 2003). Vector bundles enter naturally: the code is the image of sums of points; by a (suitable) divisor map the curve is sent to the dual projective space of the divisor's sections, which is isomorphic to the projective space of extensions of one line bundle by another, giving the rank-2 bundle: this idea is originally due to T. Johnsen (*Int. J. Pure Appl. Math.*, 2003).This talk is a report on geometric methods intended to provide algorithms for finding maximal(-degree) subbundles, which correspond to error divisors, and examples. (Received September 13, 2008)