1038-14-230   **Philip R. Busse*** (`pbusse@ms.uky.edu`), University of Kentucky, Department of Mathematics, 715 Patterson Office Tower, Lexington, KY 40506-0027. *List Decoding BCH Codes Using Gröbner Bases.* Preliminary report.

We propose to apply the methods Sudan, Lee and O'Sullivan used for list decoding Reed-Solomon Codes to BCH codes by presenting them as subfield subcodes of generalized Reed-Solomon codes. We will explore the resulting algorithm and also look at a change-of-basis transformation that may reduce the complexity. In the end, we seek ways to optimize the new algorithm and compare it to the Berlekamp-Massey algorithm. (Received February 11, 2008)