1035-20-774 **Paul Frank Baum*** (baum@math.psu.edu), Mathematics Department, Penn State University, University Park, PA 16802. *Exact Groups, K-theory, and Expanders.*

Let G be a (countable) discrete group. If the BCC (Baum-Connes with coefficients) conjecture is valid for G, then G is K-theoretically exact. A G which contains an expander in its Cayley graph is, however, not exact and is not even K-theoretically exact. In particular, a G which contains an expander in its Cayley graph is a counter- example to BCC. Does such a G exist? Some time ago, M.Gromov outlined a construction which was intended to produce such a G. Since then a number of mathematicians have worked on this existence issue, and it seems quite probable that such a G does exist.

This talk will state the basic definitions : exact group, BCC etc and will indicate why a G which contains an expander in its Cayley graph is a counter-example to BCC. (Received September 15, 2007)