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**SAMPRIT GHOSH**, University of Calgary  
*Minimal Subfields of Elliptic curves*

Let  $E$  be an elliptic curve defined over a number field  $K$  and let  $L/K$  be a finite Galois extension with Galois group  $G = \text{Gal}(L/K)$ . Akbary and Murty introduced the idea of a minimal subfield :  $K \subseteq M \subseteq L$ , minimal, such that  $\text{rank } E(M) = \text{rank } E(L)$ . They gave a description of the possibilities for  $\text{Gal}(M/K)$  when the rank  $E(L)$  is small. In this talk, we'll present results extending this idea and investigate the possibilities for  $\text{Gal}(M/K)$  when the  $\text{rank } E(L)$  increases from that of  $E(K)$  by a small amount. If time permits we'll also venture in the analytic side of things and present some results in connection to the BSD conjecture.