Classification of symmetric non-degenerate bilinear forms on finite Abelian groups

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During this talk we will classify the non-degenerate symmetric bilinear forms on finite Abelian $p$-groups. For this we will first explain the terminology and then prove the result in the case of a finite dimensional vector space over $F_p$. We will explain how one reduces the case of a finite Abelian $p$-group to the case of an $F_p$ vector space, and state the results for $p \neq 2$. 