

Exposé court

51 *Arithmetic progressions in finite fields*

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In this talk, we focus on how many arithmetic progressions we have in certain subsets of finite fields. For this purpose, we consider squares and cubes in finite fields and we use the results on Gauss and Kummer sums. The technique is based on finite Fourier analysis and certain types of Weil estimates. We obtain the exact formulas for the number of arithmetic progressions in squares when the length is 3, 4 or 5.