

**APPROXIMATIONS TO WEYL SUMS,
AND CERTAIN OF THEIR APPLICATIONS**

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ABSTRACT: We shall examine the error that arises between a Weyl sum and its natural adelic approximation. A decade ago, in a joint work with Daemen, the speaker obtained almost best possible estimates for this error both pointwise and in mean square. A modified approach yields slightly improved estimates as well as new insight in other norms, and in particular in the fourth power mean. A few applications will also be mentioned.