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On positive definite biquadratic forms irreducible to sums of squares of bilinear forms.
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The paper considers positive definite biquadratic forms

$$\sum_{i,j=1}^n \sum_{\alpha,\beta=1}^{\mu} f_{ij}^{\alpha\beta} \xi^i \xi^j \eta_{\alpha} \eta_{\beta}. \quad (1)$$

For $n > 2$, $\mu > 2$, *F. J. Terpstra* [*Math. Ann.* 116, 166-180 (1938; [Zbl 0019.35203](#))] constructed an example of a form (1) which cannot be represented as the sum of squares of bilinear forms. The present paper generalizes this result by applying Terpstra's construction and proves that if $n > 2$, $\mu > 2$ then there exists an open set of such forms in the space of biquadratic forms.

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MSC:

[11E76](#) Forms of degree higher than two

[11E39](#) Bilinear and Hermitian forms

Keywords:

biquadratic form; bilinear form; quadratic form; open set; sum of squares