

# Higher secants of spinor varieties

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Let  $S_h$  be the even pure spinors variety of a complex vector space  $V$  of even dimension  $2h$  endowed with a non degenerate quadratic form  $Q$  and let  $\sigma_k(S_h)$  be the  $k$ -secant variety of  $S_h$ . We describe a probabilistic algorithm which computes the complex dimension of  $\sigma_k(S_h)$ . Then, by using an inductive argument, we get our main result:  $\sigma_3(S_h)$  has the expected dimension except when  $h \in \{7, 8\}$ . Also we provide theoretical arguments which prove that  $S_7$  has a defective 3-secant variety and  $S_8$  has defective 3-secant and 4-secant varieties.

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