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Metric spaces and SDG. (English summary)

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This paper aims to set H. Busemann's monumental work [*Recent synthetic differential geometry*, Springer, New York, 1970; [MR0296877](#)] as a precursor of synthetic differential geometry adequately within synthetic differential geometry itself [A. B. Kock, *Synthetic geometry of manifolds*, Cambridge Tracts in Math., 180, Cambridge Univ. Press, Cambridge, 2010; [MR2567528](#); *Synthetic differential geometry*, second edition, London Math. Soc. Lecture Note Ser., 333, Cambridge Univ. Press, Cambridge, 2006; [MR2244115](#)]. The author takes advantage of two basic notions, namely, that of geodesic and that of wave front in the sense of Huygens. The main result of the paper (Theorem 7.3) is a version of the Huygens principle in synthetic terms. The presentation is completely axiomatic. *Hirokazu Nishimura*

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