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Introducing Spans[1]

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Summary. A sequence of internal approximations of simple closed curves is introduced. They are called spans.

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The notation and terminology used here are introduced in the following papers: [23], [17], [26], [2], [18], [27], [5], [4], [1], [3], [4], [25], [11], [12], [21], [7], [9], [10], [10], [12], [14], [28], [6], [7], [19], and [23].

Let C be a non vertical non horizontal non empty subset of $\mathcal{E}^2_{\rm T}$ satisfying conditions of simple closed curve and let n be a natural number. Let us assume that n is sufficiently large for C. The functor $\mathrm{Span}(C, n)$ yielding a clockwise oriented standard non constant special circular sequence is defined by the conditions (Def. 1).

(Def. 1)(i) $\mathrm{Span}(C, n)$ is a sequence which elements belong to $\mathrm{Gauge}(C, n)$,

(ii) $(\mathrm{Span}(C, n))_1 = \mathrm{Gauge}(C, n) \circ (\text{X-SpanStart}(C, n), \text{Y-SpanStart}(C, n))$,

(iii) $(\mathrm{Span}(C, n))_2 = \mathrm{Gauge}(C, n) \circ (\text{X-SpanStart}(C, n) -' 1, \text{Y-SpanStart}(C, n))$, and

(iv) for every natural number k such that $1 \leqslant k$ and $k + 2 \leqslant \mathrm{len}\,\mathrm{Span}(C, n)$ holds if front_right_cell$(\mathrm{Span}(C, n), k, \mathrm{Gauge}(C, n))$ misses C and front_left_cell$(\mathrm{Span}(C, n), k, \mathrm{Gauge}(C, n))$ misses C, then $\mathrm{Span}(C, n)$ turns left k, $\mathrm{Gauge}(C, n)$ and if front_right_cell$(\mathrm{Span}(C, n), k, \mathrm{Gauge}(C, n))$ misses C and front_left_cell$(\mathrm{Span}(C, n), k, \mathrm{Gauge}(C, n))$ meets C, then $\mathrm{Span}(C, n)$ goes straight k, $\mathrm{Gauge}(C, n)$ and if front_right_cell$(\mathrm{Span}(C, n), k, \mathrm{Gauge}(C, n))$ meets C, then $\mathrm{Span}(C, n)$ turns right k, $\mathrm{Gauge}(C, n)$.

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