where $\hat{\rho}$ is an estimate of the constant intensity. The default in `spatstat` (Baddeley et al., 2015), following Stoyan and Stoyan (1994), is to use the Epanechnikov kernel with $b = 0.15/\sqrt{\hat{\rho}}$.

Guan (2007b) and Guan (2007a) suggest to choose b by composite likelihood cross validation or by minimizing an estimate of the mean integrated squared error defined over some interval I as

$$\mathrm{MISE}(\hat{g}_m, w) = \varsigma_d \int_I \mathbb{E}\left\{\hat{g}_m(r;b) - g(r)\right\}^2 w(r - r_{\min})\mathrm{d}r, \qquad (2.2)$$

where $\hat{g}_m$, $m = k, d, c$, is one of the aforementioned kernel estimators, $w \geq 0$ is a weight function and $r_{\min} \geq 0$. With $I = (0, R)$, $w(r) = r^{d-1}$ and $r_{\min} = 0$, Guan (2007a) suggests to estimate the mean integrated squared error by

$$M(b) = \varsigma_d \int_0^R \left\{\hat{g}_m(r;b)\right\}^2 r^{d-1}\mathrm{d}r - 2 \sum_{\substack{u,v \in X_W \\ \|v-u\| \leq R}}^{\neq} \frac{\hat{g}_m^{-\{u,v\}}(\|v-u\|;b)}{\rho(u)\rho(v)|W \cap W_{v-u}|}, \qquad (2.3)$$

where $\hat{g}_m^{-\{u,v\}}$, $m = k, d, c$, is defined as $\hat{g}_m$ but based on the reduced data $(X \setminus \{u,v\}) \cap W$. Loh and Jang (2010) instead use a spatial bootstrap for estimating (2.2). We return to (2.3) in Section 5.