Limit theorems for intersections of translated sets

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Let $\Xi_n = \{\xi_1, \ldots, \xi_n\}$ be a sample of n independent points distributed on a convex body K in $\mathbb{R}^d$ according to a probability measure μ, admitting a continuous density function. We consider random sets generated from the intersection of the translations of K as

$$X_n = \bigcap_{i=1}^{n}(K - \xi_i).$$

The aim of this work is to obtain limit theorems for properly scaled X_n as $n \to \infty$. These limit results rely on the bahaviour of the density of μ near the boundary of K.