Revisiting the Intersection Problem for Maximum Packings of K_{6n+4} with Triples

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In 1989, Gaetano Quattrocchi gave a complete solution of the intersection problem for maximum packings of K_{6n+4} with triples when the leave (a tripole) is the same in each maximum packing. Quattrocchi showed that $I(4) = \{1\}$ and for all $n \equiv 4 \pmod 6 \geq 10$ $I(n) = \{0, 1, 2, \ldots, \frac{(\binom{n}{2} - \frac{(n+2)}{2})}{3} = x\} \backslash \{x-1, x-2, x-3, x-5\}$. We extend this result by removing the exceptions $\{x-1, x-2, x-3, x-5\}$ when the leaves are not necessarily the same. In particular, we show that $I(n) = \{0, 1, 2, \ldots, \frac{(\binom{n}{2} - \frac{(n+2)}{2})}{3} = x\}$ for all $n \equiv 4 \pmod 6$.

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