number of overtakes between bicycles and mopends

2020112921 刘欣豪

Try to derive and compute the expected number of overtakes between bicyles and mopends, i.e., $E(OT_{bic-mop})$.

对于 bicycle 与 mopeds，mopeds 的速度为 v_i，bicycle 的速度为 v_j

$$E(OT_{bic-mop}) = XT\int_{v_i=a}^{b}\int_{v_j=v_i}^{c} k_1k_2 p_M(v_i)p_B(v_j)(v_j - v_i)dv_j dv_i$$

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