

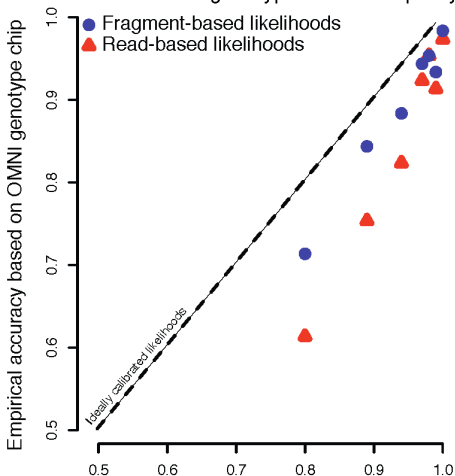
## a Mathematics of fragment-based calling

$$\Pr\{f_i | GT_{AB}\} = \frac{\Pr\{f_i | A\}}{2} + \frac{\Pr\{f_i | B\}}{2}$$

$$\text{where } \Pr\{f | B\} = \sum_{i=A,C,G,T} \left\{ \Pr\{f_{i\_sequenced} | B_{true}\} * \prod_{j=b_1, b_2} \Pr\{b_j | f_i\} \right\}$$

$$\Pr\{f_{sequenced} | B_{true}\} = \begin{cases} 1-p & f \equiv B \\ p/3 & \text{otherwise} \end{cases} \quad \Pr\{b | f\} = \begin{cases} 1-e & b \equiv f \\ e/3 & \text{otherwise} \end{cases}$$

## b SNP genotype likelihood quality



Stated confidence in the genotype based on genotype likelihoods