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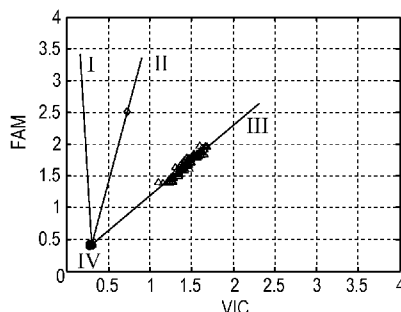
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(54) Title: SYSTEMS AND METHODS FOR GENOTYPING BY ANGLE CONFIGURATION SEARCH



$$L_i = \sum L_{i,k} + L_{i,a \text{ priori}} + L_{i, \text{Hardy Weinberg}} = 179.22$$

$$\sum L_{i,k} = 186.75$$

$$L_{i,a \text{ priori}} = -6.79$$

$$L_{i, \text{Hardy Weinberg}} = -0.74$$

Fig. 11B

(57) **Abstract:** Methods and systems for the analysis of genotyping data are presented. According to various embodiments of methods and systems, an angle configuration search may be performed. In various embodiments, an exhaustive search over the entirety of an angle configuration space may be performed to provide a fit to a plurality of angles determined for a plurality of points in a data set generated from a plurality of biological samples. For various embodiments, the angle configuration space may be defined to ensure that a global fit may be determined. According to various methods and systems, a data base of possible angle configurations may be searched, in which each angle configuration may include three angles. According to various methods and systems, a data base of possible angle configurations may include for each angle configuration a probability that the angle configuration may occur.