Notation:

Genotypes:

W = Wild-type, M = Mutant Homozygote, H = Mutant Heterozygote

Strands:

w = wild-type forward, $\bar{w}$ = wild-type reverse

m = mutant homozygote forward, $\bar{m}$ = mutant homozygote reverse

Table 1a. Wild-type and mutant homoduplex concentration fractions [1]

Before dissociation:

Genotype	$[w\bar{w}]$	$[m\bar{m}]$
W	1	0
M	x	$1-x$
H	$x+\frac{1-x}{2}=\frac{1+x}{2}$	$\frac{1-x}{2}$

Table 1b. Duplex concentration fractions [2]

After dissociation and independent annealing:

Genotype	$[d_1]=[w\bar{w}]$	$[d_2]=[w\bar{m}]$	$[d_3]=[m\bar{w}]$	$[d_4]=[m\bar{m}]$
W	1	0	0	0
M	x^2	$x(1-x)$	$x(1-x)$	$(1-x)^2$
H	$\frac{(1+x)^2}{4}$	$\frac{1-x^2}{4}$	$\frac{1-x^2}{4}$	$\frac{(1-x)^2}{4}$

[1] The fractions are given relative to total concentration 1, when a fraction x of wild-type DNA is mixed with fraction $1-x$ of the given genotype.

[2] The fractions are given relative to total concentration 1, and are obtained as the products of strand fractions in Table 1b.

Table 1c. Melting curves
The sum of duplex fractions from 1c times duplex melting curves

Genotype	Melting Curve
W	$1F_1(T)$
M	$x^2F_1(T) + x(1-x)F_2(T) + x(1-x)F_3(T) + (1-x)^2F_4(T)$
H	$\frac{(1+x)^2}{4}F_1(T) + \frac{1-x^2}{4}F_2(T) + \frac{1-x^2}{4}F_3(T) + \frac{(1-x)^2}{4}F_4(T)$

Table 1d. Melting curve differences

Genotype	Difference Curve
W-M	$1 - x^2F_1(T) - x(1-x)F_2(T) - x(1-x)F_3(T) - (1-x)^2F_4(T)$
W- H	$1 - \frac{(1+x)^2}{4}F_1(T) - \frac{1-x^2}{4}F_2(T) - \frac{1-x^2}{4}F_3(T) - \frac{(1-x)^2}{4}F_4(T)$

Table 1e. Difference Curves When $F_1(T) = F_4(T)$

Genotype	Difference Curve When $F_1(T) = F_4(T)$
$W_= - M_=$	$2x(1-x)[\frac{F_1(T)+F_4(T)}{2} - \frac{F_2(T)+F_3(T)}{2}] = m(x)F(T)$
$W_= - H_=$	$\frac{1-x^2}{2}[\frac{F_1(T)+F_4(T)}{2} - \frac{F_2(T)+F_3(T)}{2}] = h(x)F(T)$
$H_= - M_=$	$\frac{3x^2-4x+1}{2}[\frac{F_1(T)+F_4(T)}{2} - \frac{F_2(T)+F_3(T)}{2}] = (h(x) - m(x))F(T)$

Table 1f. Ordering of Absolute Heteroduplex Content Differences

Interval	Smallest, $s(x)$	Middle	Largest
$0 < x < \frac{1}{7}$	$m(x)$	$h(x) - m(x)$	$h(x)$
$\frac{1}{7} < x < \frac{1}{3}$	$h(x) - m(x)$	$m(x)$	$h(x)$
$\frac{1}{3} < x < 1$	$m(x) - h(x)$	$h(x)$	$m(x)$