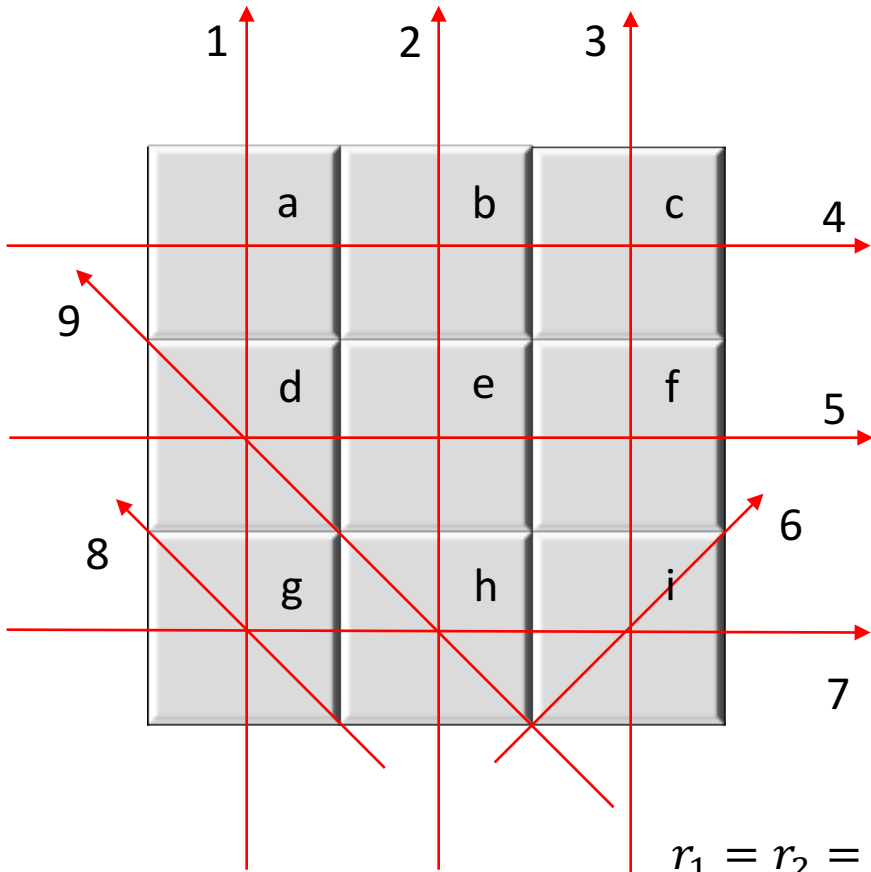


# Body Wave Tomography



$$r_1 = r_2 = r_4 = r_5 = -0.01 \text{ sec};$$

$$r_3 = r_6 = r_7 = r_8 = r_9 = 0 \text{ sec};$$

Rays are numbered aside their arrows and blocks are marked by low-case characters inside them. Simple traveltime (1 sec or  $\sqrt{2}$  sec for one block) is assumed for practice.

For each ray path, we can get one equation looks like this,

$$r_i = \sum_{blocks} t_{ij} P_j$$

where  $r_i$  is traveltime misfit between observation and prediction of ray path  $i$ ,  $t_{ij}$  is absolute traveltime in block  $j$  of ray path  $i$ , and  $P_j$  is velocity perturbation of block  $j$ .

For ray path 1 in the setting showed left, the equation should be,

$$r_1 = P_a + P_d + P_g$$

by assuming  $t_{1a} = t_{1d} = t_{1g} = 1 \text{ sec}$ .