

Diagram illustrating the aggregation process:

Initial matrix  $\Theta$  (rows:  $\begin{pmatrix} -1 & 0 & 1 \\ 0 & 0 & 1 \\ 1 & 1 & 1 \end{pmatrix}$ ) is transformed via **Dichotomization** into a set of matrices indexed by  $\pi \in \{-1, -0.5, 0, 0.5, 1\}$ .

The resulting matrices (rows) are:

- For  $\pi = -1$ :  $\begin{pmatrix} -1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{pmatrix}$
- For  $\pi = -0.5, 0$ :  $\begin{pmatrix} -1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{pmatrix}$
- For  $\pi = 0.5, 1$ :  $\begin{pmatrix} -1 & -1 & 1 \\ -1 & -1 & 1 \\ 1 & 1 & 1 \end{pmatrix}$

These matrices are then aggregated via **Aggregation** to produce the final matrix  $\tilde{\Theta}$  (rows:  $\begin{pmatrix} -3/5 & 1/5 & 1 \\ 1/5 & 1/5 & 1 \\ 1 & 1 & 1 \end{pmatrix}$ ).

The aggregation formula is given by:

$$\tilde{\Theta} = \frac{1}{2H+1} \sum_{\pi \in \Pi} \text{sgn}(\Theta - \pi)$$