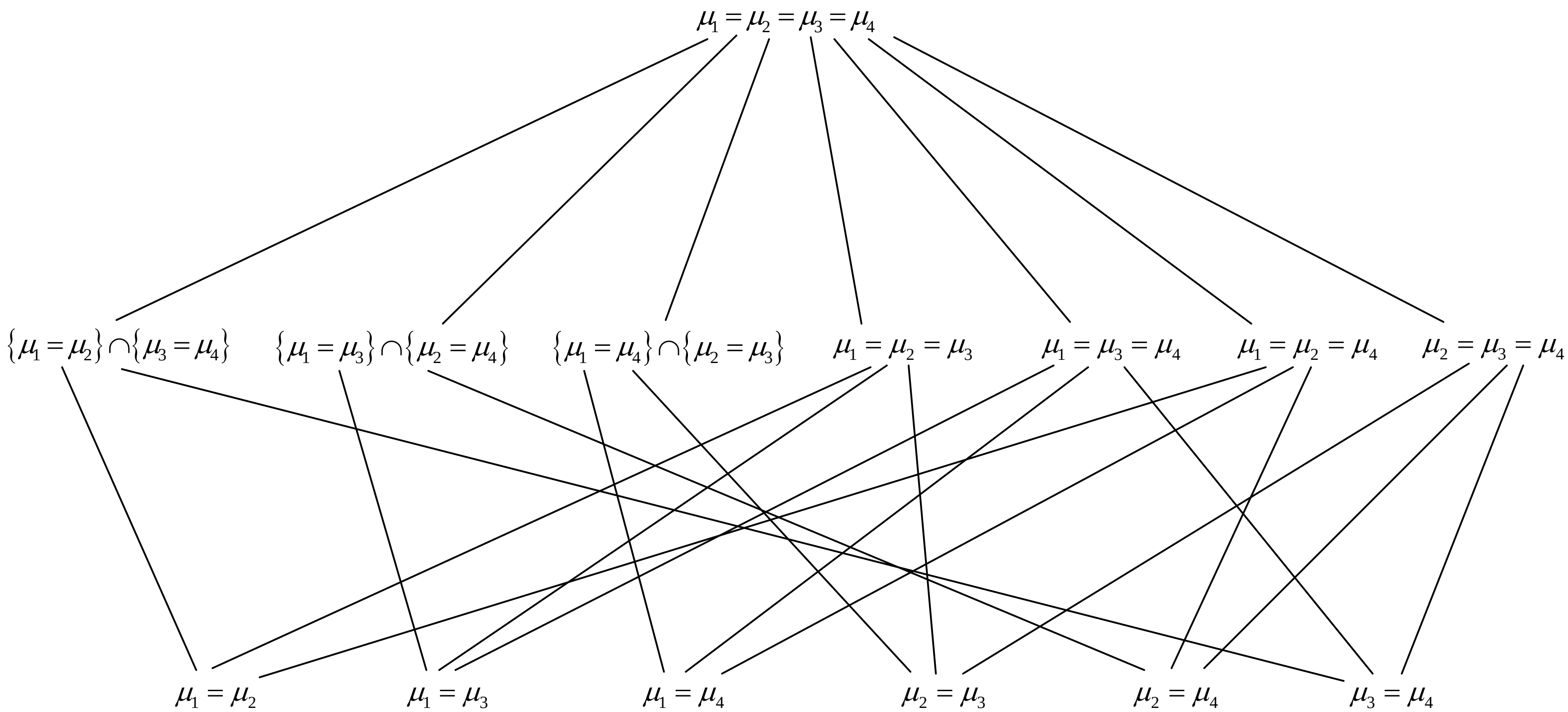

Figure 1: Perilz's Closed Family of All Subset Homogeneity Hypotheses (refer to Westfall, 1999).

Table 5: Formulas for Adjusted P-value at i^{th} Hypothesis

Single-step	Step-down	Step-up
1.Bonferroni $\tilde{p}_i = \min\left(kp_i, 1\right)$	**1.Bonferroni-Holm** $\tilde{p}_{(i)} = \max(\tilde{p}_{(i-1)}, \left(k-i+1\right) p_{(i)})$	**1. Hochberg** $\tilde{p}_{(k-i)} = \min(\tilde{p}_{(k-i+1)}, \left(i+1\right) p_{(k-i+1)})$
2. Šidák $\tilde{p}_i = 1-\left(1-p_i\right)^k$	**2. Šidák-Holm** $\tilde{p}_{(i)} = \max\left(\tilde{p}_{(i-1)}, 1-\left(1-p_{(i)}\right)^k\right)$	**2. Rom** Use cutpoint $\left(C_i\right)$ instead critical value.
3. min P $\tilde{p}_i = \Pr\left(\min_{1\le l\le k} P_l \le p_i \mid H_0^c\right)$	**3. Simes Modified Bonferroni** $\tilde{p}_{(i)} = \max(\tilde{p}_{(i-1)}, \frac{kp_{(i)}}{i})$	
4. max T $\tilde{p}_i = \Pr\left(\max_{1\le l\le k} \left\|T_l\right\| \le \left\|t_i\right\| \mid H_0^c\right)$	**5. min P** $\tilde{p}_{(i)} = \max_{m=1,\ldots,i}\left\{\Pr\left(\min_{l\in\{m,\ldots,k\}} P_l \le p_{(m)} \mid H_0^c\right)\right\}$	
	6. max T $\tilde{p}_{(i)} = \max_{m=1,\ldots,i}\left\{\Pr\left(\max_{l\in\{m,\ldots,k\}} \left\|T_l\right\| \ge \left\|t_{(m)}\right\| \mid H_0^c\right)\right\}$	

(Hsu, 1996; Westfall, 1999; Rafter, 2002; Dudoit el al., 2003)

Table 13: Algorithm of Step-down min P Adjusted P-values

Step	Adjusted p-value
1	$\tilde{p}_{(1)} = \Pr\left(\min_{l\in\{1,\ldots,k\}} P_l \le p_{(1)} \mid H_o^c\right) = \Pr\left(\min\left(P_1, P_2, \ldots, P_k\right) \le p_{(1)} \mid H_o^c\right)$
2	$\tilde{p}_{(2)} = \max\left\{\Pr\left(\min_{l\in\{1,\ldots,k\}} P_l \le p_{(1)}\right), \Pr\left(\min_{l\in\{2,\ldots,k\}} P_l \le p_{(2)}\right)\right\}$
i	$\tilde{p}_{(i)} = \max_{m=1,\ldots,i}\left\{\Pr\left(\min_{l\in\{m,\ldots,k\}} P_l \le p_{(m)}\right)\right\}$
k	$\tilde{p}_{(k)} = \max\left\{\Pr\left(\min_{l\in\{1,\ldots,k\}} P_l \le p_{(1)}\right), \Pr\left(\min_{l\in\{2,\ldots,k\}} P_l \le p_{(2)}\right), \ldots, \Pr\left(\min_{l\in\{k-1,k\}} P_l \le p_{(k-1)}\right), \Pr\left(\min_{l\in\{k\}} P_l \le p_{(k)}\right)\right\}$

Table 14: Algorithm of Step-down max T Adjusted P-values

Step	Adjusted p-value
1	$\tilde{p}_{(1)} = \Pr\left(\max_{l\in\{1,\ldots,k\}} \lvert T_l\rvert \ge \lvert t_{(1)}\rvert \mid H_o^c\right) = \Pr\left(\max\left(\lvert T_1\rvert, \lvert T_2\rvert, \ldots, \lvert T_k\rvert\right) \ge \lvert t_1\rvert \mid H_o^c\right)$
2	$\tilde{p}_{(2)} = \max\left\{\Pr\left(\max_{l\in\{1,\ldots,k\}} \lvert T_l\rvert \ge \lvert t_{(1)}\rvert\right), \Pr\left(\max_{l\in\{2,\ldots,k\}} \lvert T_l\rvert \ge \lvert t_{(2)}\rvert\right)\right\}$
i	$\tilde{p}_{(i)} = \max_{m=1,\ldots,i}\left\{\Pr\left(\max_{l\in\{m,\ldots,k\}} \lvert T_l\rvert \ge \lvert t_m\rvert \mid H_0^c\right)\right\}$
k	$\tilde{p}_{(k)} = \max\left\{\Pr\left(\max_{l\in\{1,\ldots,k\}} \lvert T_l\rvert \ge \lvert t_{(1)}\rvert\right), \Pr\left(\max_{l\in\{2,\ldots,k\}} \lvert T_l\rvert \ge \lvert t_{(2)}\rvert\right), \ldots, \Pr\left(\max_{l\in\{k-1,k\}} \lvert T_l\rvert \ge \lvert t_{(k-1)}\rvert\right), \Pr\left(\max_{l\in\{k\}} \lvert T_l\rvert \ge \lvert t_{(k)}\rvert\right)\right\}$