Convex hull area 1.00 — Hypervolume area 0.83 — difference $0.17 = M^N$

Convex hull area 1.00 — Hypervolume area 0.89 — difference $0.11 = M^I$

Reference nadir point

Reference ideal point

$\mathcal{Y}_N$

y^r

M^N small implies convexity $\Leftrightarrow$ M^N large imples convavity

M^I small implies convavity $\Leftrightarrow$ M^I large implies convexity

Ratio $M^I/M^N = 0.63$

$(1-M^N)/2 + M^I/2 = 0.47 ((M^I) + (1-M^N))/2 = 0.47$