General Operations (GO) Index Description

Skill scores (S) are computed for wind speed (at 250 hPa, 400 hPa, 850 hPa and surface), dew point temperature (at 400 hPa, 700 hPa, 850 hPa and surface), temperature (at 400 hPa and surface), height (at 400 hPa), and mean sea level pressure, using root-mean-square-error (RMSE) for both the baseline configuration and the comparison configurations using the formula:

$$S = 1 - \frac{(RMSE_{comparison})^2}{(RMSE_{baseline})^2}$$

For each variable, level, and forecast hour, predefined weights (w_i), shown in the table below, are then applied and a weighted sum, S_W, is computed

Variable	Level	Weights by lead time			
		12 h	24 h	36 h	48 h
Wind Speed	250 hPa	4	3	2	1
	400 hPa	4	3	2	1
	850 hPa	4	3	2	1
	Surface	8	6	4	2
Dew Point Temperature	400 hPa	8	6	4	2
	700 hPa	8	6	4	2
	850 hPa	8	6	4	2
	Surface	8	6	4	2
Temperature	400 hPa	4	3	2	1
	Surface	8	6	4	2
Height	400 hPa	4	3	2	1
Pressure	Mean sea level	8	6	4	2

where,

$$S_w = \frac{1}{\sum_i w_i}\left(\sum_i (w_i S_i)\right)$$

Once the weighted sum of the skill scores, S_w, is computed, the Index value (N) is defined as:

$$N = \sqrt{\frac{1}{1 - S_w}}$$

Given this definition, which is based on the General Operations (GO) Index, values (N) less than one indicate the baseline configuration has higher skill and values greater than one indicate the comparison configuration has higher skill.