Parameters related to $g_{\min}$ stepping

When the Newton-Raphson (NR) method fails to converge, SEQUEL uses $g_{\min}$ stepping (see Sec. 3.5.2 in Part-1). $g_{\min}$ stepping is allowed only for DC and transient simulation types. The following parameters are related to $g_{\min}$ stepping.

* `gmin_step`: (`yes`/`no`) decides whether $g_{\min}$ stepping should be used (when normal NR convergence fails). By default, this parameter is set to `yes` if there are highly nonlinear elements (semiconductor devices such as diodes and transistors) in the circuit; otherwise, it is set to `no`.

* `gmin_init`: (`yes`/`no`) decides whether $g_{\min}$ stepping should be used to obtain the initial solution (default: `yes`). Not relevant if `gmin_step` is `no`.

* `gmin_start`: The starting value of $g_{\min}$ in $\mho$ (default: 0.1)

* `gmin_end`: The final value of $g_{\min}$ in $\mho$ (default: 10^{-12})

* `gmin_npoints`: (integer) number of gmin points (default: 50).

  During $g_{\min}$ stepping, successive values of $g_{\min}$ are related by $g_{\min}^{(n+1)} = k' \times g_{\min}^{(n)}$. `gmin_start`, `gmin_end`, and `gmin_npoints` are used to compute the ratio k'.

* `gmin_itmax_newton`: (integer) maximum number of NR iterations allowed during $g_{\min}$ stepping (default: 500).

* `gmin_dmp`: (`yes`/`no`) decides whether damping (see Eq. 3.19 in Part-1) should be used during $g_{\min}$ stepping (default: `no`)

* `gmin_dmp_k`: (real number) damping factor k ($0 < k < 1$) to be used during $g_{\min}$ stepping (see Eq. 3.19 in Part-1). Not relevant when `gmin_dmp` is set to `no`.

* `gmin_dmp_newt_max`: (integer) number of NR iterations for which damping is applied during $g_{\min}$ stepping (default: 50). Not relevant when `gmin_dmp` is set to `no`.