

A Two-Level SOLVER ??

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Hello;

I would very much appreciate your help in the following relatively simple non-linear optimization problem.

1) By applying Solver:

.....Set target cell: E18 to max.....(E18 represents dependent variable E)
.....By changing cells: J18(J18 represents independent variable J)
.....: P18.....(P18 represents independent variable P)
.....Subject to constraints: B18=1
.....: J range 0.05 to 1.40
.....: P range 0.50 to 1.50

it produces a feasible solution (J, P, E), which is not exactly the "correct" one (differs by about 10% of what it should be)

2) The difficulty is directly associated with the above formulation of the problem.

For any value of the changing variable P, say P1, in the range P=0.50 to 1.50, there is a max E1 at J1.

Solver in 1) above appears to seek the solution for max E based on the changing combinations of J and P and settles for the combination that produces max E in comparison with other combinations and subject to the constraints.

This is clearly not what I had in mind!!

3) The correct formulation of the problem should be, I think, something like:

...Solver1: for each tried value of P, say, P1 in the range 0.50 to 1.50
...Set target cell: E18 to max.....(E18 represents dependent variable E)
...By changing cells: J18(J18 represents independent variable J)
...Subject to constraints: J range 0.05 to 1.40
.....(solution: J1, max E1 at each P1)
.....Solver2:
.....Set target cell: B18 = 1
.....By changing cells: J18(J18 now represents the new variable J1)
.....Subject to constraints: J1 range 0.05 to 1.40 (same range of J is fine)
.....(solution: J2, P2, max E2)

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4) How would you intelligently combine Solver1 and Solver2 as a 2-level Solver ?? either by running Solver manually or by a macro. And, is it possible to do so relying entirely on the Solver internal trial solutions without establishing the relation between P1s and E1s (which is not easy to do) ??

Thank you kindly.