|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PI COMPENSATOR OF A BUCK CONVERTER** | | | | | | | | |
| **Various Detected Faults PI controller in the presence of MULTIPLE faults with deviations** | | | | | | | | |
| **Injected Faults** | **=500** | | | | **=1000** | | | |
| **Optimal Order – 6th, =0.0162** | | **Optimal Order – 7th, =0.0161** | | **Optimal Order – 6th, =0.0164** | | **Optimal Order – 7th, =0.0162** | |
| **No. of Coefficients Out of Bound** | **Fault Detection Status** | **No. of Coefficients Out of Bound** | **Fault Detection Status** | **No. of Coefficients Out of Bound** | **Fault Detection Status** | **No. of Coefficients Out of Bound** | **Fault Detection Status** |
| Ccomp 10%**↓**  Chf 20%**↑**  R1 12%**↓** | 24 | **√** | 24 | **√** | 24 | **√** | 36 | **√** |
| R1 11%**↓**  Rcomp1 22%**↑**  Rcomp=13%**↓** | 27 | **√** | 35 | **√** | 27 | **√** | 35 | **√** |
| Rcomp1 9%**↓**  Rcomp 13%**↑**  Rf1 18% **↑**  Rf2 8% **↓** | 4 | **√** | 0 | **X** | 1 | **√** | 35 | **√** |
| Ccomp 15%**↓**  Chf 11%**↑**  Rf1 9% **↓**  Rf2 19% **↑** | 3 | **√** | 2 | **√** | 2 | **√** | 36 | **√** |
| R1 8%**↑**  Rf1 12% **↓**  Rf2 14% **↑** | 27 | **√** | 35 | **√** | 27 | **√** | 34 | **√** |