```
Uf = limited_lag(Usum, Trv, Ufmin, Ufmax)
Usum = Ku * Vc + K1u * derlag(Vc, T1u) +  lag(Vs, Tbch) - K1if * derlag(If,T1if)
Vs = Kf * Tf * derlag(Su,Tf) + K1f * derlag(Su,T1f)
Vc = Vref - Vg + Ig * Xc
```