uint16\_t vbat,ibat;

**float** duty = 0.5; /\* initial converter duty \*/

**void** **main**()

{

initialise\_msp();

**while**()

{

adc\_results\_get(&vbat, &ibat);

**if**(vbat > BATTERY\_FLOAT)

{

/\* Battery fully charged. Turn off converter \*/

duty = 0;

}

**else**

{

mppt\_algo(vbat, ibat);

}

converter\_duty\_set(duty);

}

}

**void** **converter\_duty\_set**(**float** d)

{

TD0CCR1 = (uint16\_t)(duty\*(**float**)TD0CCR0);

}

**void** **mppt\_algo**(uint16\_t vb, uint16\_t ib)

{

**static** uint32\_t power\_prev = 0;

**static** **float** duty\_step = 0.05;

uint32\_t power\_new;

power\_new = vb\*ib;

**if**(power\_new > power\_prev)

{

duty = duty + duty\_step

}

**else**

{

duty\_step = -duty\_step;

duty = duty + duty\_step;

}

/\* Limits on duty cycle \*/

**if**(duty < 0)

{

duty = 0;

}

**else** **if**(duty > 0.98)

{

duty = 0.98

}

}