Homework 2

1. (a) (10 pts) Compute the Einstein stress-energy tensor in the 3d Maxwell theory (by varying the action w. r. to the metric) and show that its trace is non-zero on-shell. Show that no gauge-invariant modification of the stress-energy tensor can make it traceless.

(b) (10 pts) In the same theory, compute the conserved current corresponding to the dilatation symmetry.