

## Homework

### Set 3, Exercise 4

Let  $n \geq 3$  and  $u \in \mathcal{D}'(\mathbb{R})$ . Show that if  $\Delta u$  is continuous then  $u$  is continuous.

Hint(I think): Let  $\Delta E = \delta$  and take  $\chi \in C_0^\infty$  with  $\chi = 1$  near the origin. Show first that  $\Delta(\chi E) = \delta + \phi$  where  $\phi \in C_0^\infty$ .