

Exercise to lecture 4 on 6.3.2017

Exercise 28. The algebra

$C^\infty(\mathcal{A})[x^{-1}, x]$  with its multiplication  
and the bracket

$$\{, \}_1 = [, ]_1 : C^\infty(\mathcal{A})[x^{-1}, x] \times C^\infty(\mathcal{A})[x^{-1}, x] \rightarrow C^\infty(\mathcal{A})[x^{-1}, x]$$

$$[x^k f, x^l g]_1 = X^{k+l+2} (l(\partial_z f)g - kf(\partial_z g)), \quad f, g \in C^\infty(\mathcal{A})$$

is a Poisson algebra.