

8.1 Show that the derivation $d : \widehat{\Omega}_{\mathbb{W}(A)} \rightarrow \widehat{\Omega}_{\mathbb{W}(A)}$ is unique.

8.2 In order to show that $\check{\Omega}_{\mathbb{W}(A)}$ has the necessary structure, we need the following.

1. Show that the map $F_n : \widehat{\Omega}_{\mathbb{W}(A)} \rightarrow \widehat{\Omega}_{\mathbb{W}(A)}$ descends to a map

$$F_n : \check{\Omega}_{\mathbb{W}(A)} \rightarrow \check{\Omega}_{\mathbb{W}(A)}.$$

2. Show that the graded derivation $d : \widehat{\Omega}_{\mathbb{W}(A)} \rightarrow \widehat{\Omega}_{\mathbb{W}(A)}$ descends to a graded derivation

$$d : \check{\Omega}_{\mathbb{W}(A)} \rightarrow \check{\Omega}_{\mathbb{W}(A)}.$$

3. Show that they satisfy the formula

$$F_n dV_n(a) = da + (n - 1)d \log[-1] \cdot a.$$