Mathematisches Institut
Universität München
Prof. Dr. M. Schottenloher
C. Paleani

WS 2010/11

Tutorial in Mathematical Gauge Theory
Exercise 2

2. (a) Examine, whether or not the fibrations $T\mathbb{S}^n \to \mathbb{S}^n$ are trivial for $n = 1, 2, 3$.

   (b) Give a detailed description of the tautological bundle $T \to \mathbb{C}P^n$ (by bundle charts), where $T := \{(p, z) \in \mathbb{C}P^n \times \mathbb{C}^{n+1} | z = 0 \vee z \in p\} \subset \mathbb{C}P^n \times \mathbb{C}^{n+1}$ with the induced structure. Show that T is not trivial.