Vademecum for the editing of the QFT notes on overleaf

1. There are several reasons for students to contribute to the QFT notes. First of all, writing part of the notes is an extremely efficient way for the student to force her/himself to deeply understand the topic. Another reason is that students know better than teachers which are the hard points. In this respect clarifying additions of these "hard points" are very welcome. Sometimes such additions concern points that was unclearly illustrated in most books. In this respect errors/typos etc. in QFT books have a pedagogical character.

2. There are still several topics to be added to the notes. For a list you may contact me.

3. Check that your addition does not contain results already considered in other parts of the notes. Short repetitions are useful only in relevant cases.

4. Check if the presentation of your additions can be improved.

5. Do not use spoken language abbreviations, e.g. use "let us" instead of "let's" and "we will" instead of "we'll". Avoid the use of spoken language, such as "we are going to show" and "so". Even the use of "let us" should be considerably restricted. The descriptions should be technical, essential and, possibly, elegant.

6. Check that each sentence is well written, check the logical consistency and be sure that it has a clear meaning ... and double check possible typos, english etc. .

7. Distinguish between partial and total derivatives using the appropriate symbols. In particular, like in thermodynamics, even in QFT there are points where it should be specified which variables should be considered constants in defining the partial derivatives. See for examples the method of characteristics in the chapter on renormalization of the notes.

8. As done in most of the modern math literature, use log instead of ln.

9. All formulas in math mode should end either with \ . or \ , .

10. The Feynman diagrams should have a standard style. This concerns the loops, that should be circles not ellipses, except in the case of same diagram, like the 4-point function. One should also use a uniform style for diagrams without external legs, e.g. picturing the missing legs by $--O--$. Also, the spacing between diagrams should be sufficiently wide and always the same. They should be well centered, so propagators in a sum of diagrams should be on the same level line.

11. Numbering of formulas should be restricted to the ones to which one refers in other parts of the text. Exceptions concern the main/relevant formulas. In the present version there too many numbered formulas.

12. Remember that a variable such as x is different from x, so remember to insert dollars in the main text.

13. It is much better to use exp(...) than $e^{\cdots}$, in particular when ... is a fraction (the characters become microscopic).

14. If possible, one should avoid to write formulas exceeding the margins of the page.

15. In align use ... \cr & = instead of ... = \cr & =, and similarly for +,-, $\times$.

16. Distinguish between the vacuum of a free theory, using the symbol $|0\rangle$ and the one of an interacting theory, denoted by $|\Omega\rangle$. Note that $\rangle$ (=\rangle) and $>$ are different symbols.

17. Distinguish between $\cdots$ (=\cotds) and ... (=\lotds). Usually $\cdots$ indicates multiplications, so, for example it is correct to use $\phi(x_1)\cdots\phi(x_N)$ inside the path integral (there the fields are classical), whereas in a correlator one has $\langle\Omega|T\phi(x_1)\dots\phi(x_N)|\Omega\rangle$, where the ϕ's are operators. Using $\cdots$ for operators is like using $\partial_x\cdot\partial_y$.

18. Use "this" instead of "this". Note that in the italian keyboard there is no ‘, so search somewhere and uses cut and paste or include it in your keyboard symbols, or, more pragmatically, buy a laptop with the american keyboard.

19. The title of sections and subsections should follow a uniform style: at the moment the use of capital letters is rather random.

20. Check the definitions in the file main.tex: for example the symbols for the generating functionals is \gfunc, whereas for the generating functionals of connected Green's functions use \cgfunc. Their effective correspondence was \gfunc=W and \cgfunc=Z, which is the Ramond and Pokorski notation. Recently we changed to \gfunc=Z and \cgfunc=W, which is the notation used almost everywhere. Be careful in replacing Z and W by \cgfunc=Z and \gfunc=W. For example, this was done for the constant Z of the exact propagator in the section of the proper vertex functions, resulting in $1/\tilde{G}^{(2)}(p)\sim(iW)^{-1}(p^2-m^2)$, instead of $1/\tilde{G}^{(2)}(p)\sim(iZ)^{-1}(p^2-m^2)$.

21. Let us know if you find errors, typos, etc. both in the notes and in the Ramond book. For the latter there is an errata corrige at the Matone's home page.