Errata for the Book Noncommutativity and Origins of String Theory

Throughout the book; I sometimes use the word ‘falls’ in place of the word ‘follows’ in the logical sense.

Page 59; The projective spaces on top are wrong. You should correct them by omitting the origin in the various denominators. Also you must set n:=n+1 on the right hand side, otherwise the dimensions are wrong.

Page 91; Elliptic manifolds (manifolds with positive scalar curvature) should read hyperbolic manifolds (manifolds with negative scalar curvature), so they are AdS spaces after a conformal transformation in this case.

Page 112; The Klein-Gordon operator should include an infitisimal imaginary deformation epsilon to make the inverse well defined.

Page 126; The Legendre transform needs a minus after the Hamiltonian.

Page 142; In the beginning of the page it should state ’the only symmetric, trace-less covariant tensor in second order derivatives of the metric that can be constructed.

Page 167; The connections should all include the sum of gauge potentials in all sectors including gravity , i.e also the Riemannian connection in the orthonormal frame, electroweak potential, QCD potential etc.

Page 207; Lemma 12.2 has errors in the calculus. Never the less the statement of the lemma is correct.

Page 242; The small gamma should be under the integral sign, it signifies a path that is the integration domain.

Page 244; We should understand that we are restricting the mass of the particles in the diagram to m=0, so this singles out one point in the moduli. Of course this implies that String Theory and Gauge Theory give the same results at high energies. From the perspective in our book mass and curvature are the same-more exactly m^2=Ricci scalar/4.

Page 266-267; My mistake- This proof is not valid, albeit for the gauge theory sector constricted to the diagrams generated by Weyl fermions and Weyl bosons it is valid by other means. I was thinking that the Teichmuller or moduli space was compact which does not seem to hold. Again; if we go to high enough energies the two amplitudes will tend to the same even in the massive gauge theory sector.

Page 296; I do not think that the reasoning with the determinant of a exponential function on top of the page is true. Disregard it.

Page 311; I use the standard notation E instead of X on the last page. Everybody uses this notation, but it is confusing. So, really, ∂X=E if E was a vielbein. But in the literature E is not a vielbein. So, if we let E be a vielbein we should have written ∂E|wrong:=∂X=E.