Local $AdS_2 \times S^2$ Topology, Perfect Fluids and Conformal Weyl Gravity[1] DAKSH AGGARWAL, IAN MASSON, JUNZE YAO, LEO RODRIGUEZ, SHANSHAN RODRIGUEZ, Grinnell College — We study the solution space of Conformal Weyl Gravity with local $AdS_2 \times S^2$ topology. We find a vacuum solution exhibiting a Petrov Type O (conformally flat) and Segre Type $\{(111), 1\}$ (perfect fluid) classification. We compute the perfect fluid energy momentum tensor within the Einstein Gravity frame work and also compute the conformal diffeomorphism, mapping the solution to flat spacetime modulo a conformal factor. We comment on future work concerning the quantum gravity of this solution within the Conformal Weyl Gravity paradigm and the AdS/CFT correspondence.

[1]Department of Physics, Grinnell College

Daksh Aggarwal
Grinnell College

Date submitted: 31 Jan 2020   Electronic form version 1.4