[38] Z. Surujon, Phys. Rev. D **73**, 016008 (2006) [arXiv:hep-ph/0507036].

[39] R. Davies, D. P. George and R. R. Volkas, Phys. Rev. D **77**, 124038 (2008) [arXiv:0705.1584 [hep-ph]].

[40] M. Toharia and M. Trodden, Phys. Rev. Lett. **100**, 041602 (2008) [arXiv:0708.4005 [hep-ph]].

[41] M. Toharia and M. Trodden, Phys. Rev. D **77**, 025029 (2008) [arXiv:0708.4008 [hep-ph]].

[42] J. Lesgourgues and L. Sorbo, Phys. Rev. D **69**, 084010 (2004) [arXiv:hep-th/0310007].

[43] W. D. Goldberger and M. B. Wise, Phys. Rev. Lett. **83**, 4922 (1999) [arXiv:hep-ph/9907447].

[44] A. Zettl, "Sturm-Liouville Theory", Mathematical Surveys and Monographs vol. 121 (2005), ISBN-10: 0-8218-3905-5, ISBN-13: 978-0-8218-3905-8

[45] O. S. Rothaus, Duke Mathematical Journal, Vol. 45, No. 2, (1978).

[46] M. Toharia, arXiv:0803.2503 [hep-th].

[47] K. Skenderis and P. K. Townsend, Phys. Lett. B **468**, 46 (1999) [arXiv:hep-th/9909070].

[48] O. DeWolfe, D. Z. Freedman, S. S. Gubser and A. Karch, Phys. Rev. D **62**, 046008 (2000) [arXiv:hep-th/9909134].

[49] C. Csaki, M. L. Graesser and G. D. Kribs, Phys. Rev. D **63**, 065002 (2001) [arXiv:hep-th/0008151].

[50] B. Batell and T. Gherghetta, Phys. Rev. D **78**, 026002 (2008) [arXiv:0801.4383 [hep-ph]].

Appendix A: Scalar Perturbations in the Generalized Longitudinal Gauge

In this appendix we derive the linearized 5D Einstein and field equations for scalar perturbations in the bulk. We linearize around a background metric of the form

$$ds^2 = a^2(y)\left(\gamma_{\mu\nu}(x)dx^\mu dx^\nu - dy^2\right) \ . \tag{A1}$$

The background Einstein and field equations in these coordinates are

$$\mathcal{H}' - \frac{\Lambda}{6}a^2 \ = \ -\frac{\kappa^3}{2}\left(\sum_a \frac{1}{2}\chi_a'^2 + \frac{1}{3}a^2\, W(\chi_a) + \frac{2}{3}a^2\sum_i \lambda_i(\chi_a)\delta(y-y_i)\right) \tag{A2}$$

$$\mathcal{H}^2 \ - \ \frac{\Lambda}{6}a^2 + \frac{{}^{(4)}\mathcal{R}}{12} = \frac{\kappa^3}{6}\left(\sum_a \frac{1}{2}\chi_a'^2 - a^2 W(\chi_a)\right) \tag{A3}$$

$$\chi_a'' \ + \ 3\mathcal{H}\chi_a' - a^2\frac{\partial W}{\partial \chi_a} - a^2\sum_i \frac{\partial \lambda_i}{\partial \chi_a}\delta(y-y_i) = 0 \ , \tag{A4}$$