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N-spike string in $AdS_3 \times S^1$ with mixed flux

Sigma model in $AdS_3 \times S^3$ background supported by both NS-NS and R-R fluxes is one of the most distinguished integrable models. We study a class of classical string solutions for N-spike strings moving in $AdS_3 \times S^1$ with angular momentum J in $S^1 \subset S^5$ in the presence of mixed flux. We observe that the addition of angular momentum J or winding number m results in the spikes getting rounded off and not end in cusp. The presence of flux shows no alteration to the rounding-off nature of the spikes. We also consider the large N -limit of N-spike string in $AdS_3 \times S^1$ in the presence of flux and show that the so-called Energy-Spin dispersion relation is analogous to the solution we get for the periodic-spike in AdS_3 -pp-wave $\times S^1$ background with flux.

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