1112-37-264 **E Arthur Robinson*** (robinson@gwu.edu), Department of Mathematics, George Washington University, Washington, DC 20052, and **Joseph Rosenblatt** and **Ayse A Sahin**. *The spectrum of unit suspensions and embeddings for $\mathbb{Z}^d$ actions, and directional ergodic properties.* Preliminary report.

Let $T^{\vec{n}}$ be an ergodic $\mathbb{Z}^d$ action, $d \geq 1$, of a Lebesgue probability space. Let $\mathcal{T}^{\vec{t}}$ be the unit suspension of $T^{\vec{n}}$ (an $\mathbb{R}^d$ action), and let $T^{\vec{t}}$ be an embedding of $T^{\vec{n}}$ into an $\mathbb{R}^d$ action (it may not exist or may not be unique). Let $U_T^{\vec{n}}$, $U_{\mathcal{T}}^{\vec{t}}$ and $U_T^{\vec{t}}$ (respectively) be the corresponding unitary representations of $\mathbb{Z}^d$, $\mathbb{R}^d$ and $\mathbb{R}^d$ on L^2, and let σ_T, $\boldsymbol{\sigma}_{\mathcal{T}}$ and $\boldsymbol{\sigma}_T$ be the corresponding maximal spectral types on $\mathbb{T}^d$, $\mathbb{R}^d$, and $\mathbb{R}^d$ (respectively). If $\pi : \mathbb{R}^d \to \mathbb{T}^d$ is the exponential map, we show that $\sigma_T = \pi^*(\boldsymbol{\sigma}_{\mathcal{T}}) = \pi^*(\boldsymbol{\sigma}_T)$ (π^* is the push forward), and moreover $\boldsymbol{\sigma}_{\mathcal{T}} \sim \sigma_T * \delta_{\mathbb{Z}^d}$, so that $\boldsymbol{\sigma}_T \prec \boldsymbol{\sigma}_{\mathcal{T}}$ for any embedding $T^{\vec{t}}$. The proof uses tempered distributions. We discuss implications for directional ergodic properties. (Received August 06, 2015)