

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Space Culture – Public Engagement in Space through Culture (9)

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CAPE (CLIMATE ANTICIPATION PERSONAL ENVIRONMENT): CONSTRUCTING THE
CAAS-WARDROBE**Abstract**

One of the greatest risks humanity faces is Climate Change. Evidence on sea-level rise and extreme weather events supports that climate systems are changing as well as our relationship to climate. Changes are taking place at the global and national level, on built structures at the city and community level, yet we construct an understanding of climate relative to our personal context. To anticipate future urban microclimate patterns we must find ways to imagine and communicate them, using indicators and modes that are more personally relevant and in real-time. A wardrobe is a personal and portable environment, a boundary between body and environment, with the capacity to sense and communicate as a climate indicator. We propose CAPE (Climate Anticipation Personal Environment) as an enhanced indicator, as a part of a wider project called City As A Spaceship (CAAS) that explores imminent spaceship parameters, such as climate monitoring and control, as important factors for crewed vehicles and habitats. CAAS is a metaphor for learning from reciprocities between a spaceship and dense cities - thus considering resource use, self-sufficiency, constrained spaces, renewable energy and multiculturalism; a spin-off and spin-in at the same time. Data is pervasive yet invisible. Air quality is also difficult to see, yet it informs our beliefs that our environment is habitable. Consider a scenario where an individual wearing CAPE enters a courtroom holding proceedings on urban air quality. Once inside, the individual's wardrobe indicates the air is highly polluted. As perception is primarily visual, those looking around can now see the environmental contamination, as CAPE communicates the environmental status. This paper introduces CAPE as a data-rich personal environment and an intelligent subsystem of CAAS in SMART city settings. It is a practical rather than an aesthetic wardrobe that integrates space technology beyond its original intent, capturing our surrounding environment - gaseous, thermal, and perhaps acoustic. It is a wardrobe that exchanges information between inhabitants and their urban habitats, where air quality, urban congestion, heat islands and extreme thermal fluctuations are an everyday experience. CAPE gathers data at the personal level and communicates with the commons. As the speed of Big Data processing approaches and exceeds the speed of living, it has the potential to be predictive and anticipatory and wardrobe becomes an indicator of urban microclimates. Keywords: Wardrobe, Climate Change, Sensing, City, Spaceship.