

Characterizing scientific production and consumption in Physics

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We analyze the entire publication database of the American Physical Society generating longitudinal (50 years) citation networks geolocalized at the level of single urban areas. We define the knowledge diffusion proxy, and scientific production ranking algorithms to capture the spatio-temporal dynamics of Physics knowledge worldwide. By using the knowledge diffusion proxy we identify the key cities in the production and consumption of knowledge in Physics as a function of time. The results from the scientific production ranking algorithm allow us to characterize the top cities for scholarly research in Physics. Although we focus on a single dataset concerning a specific field, the methodology presented here opens the path to comparative studies of the dynamics of knowledge across disciplines and research areas.