Abstract Submitted
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**The First Experimental Chain at NAL: Collaborating Despite Global Differences** VITALY PRONSKIKH, Fermilab — We invoke the concepts of trading zones (TZ) and actor-network theory (ANT) to study the history of the international proto-megascience experiments on small-angle proton scattering conducted at NAL/Fermilab from 1970 to 1980. Through examination of the birth of proto-megascience, we clarify its organizational traits and how it came into existence. Our choice to consider this period in the framework of TZs is justified by the presence of cultural and socio-ontological differences. I suggest that the similarities between TZs and ANT can help us understand these experiments. This study traces proto-megascience experiments gradual shift from a heterogeneous type of TZ supported by institutional encouragement to a self-sustained homogeneous type of TZ, with samples of their technological language and research practices spread throughout the scientific community within the laboratory context. We find empirical evidence that at least in high-energy physics, the generalized model of TZs suggests an effective strategy for creating small but stable international collaborations and allows us to predict possible trajectories of their future development through the joint lens of TZ/ANT. Such an approach can provide broad insights into international collaboration of globally diverse actors.

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