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Composition dependences of jump frequencies in pseudo-binary phases GARY S. COLLINS, RANDAL NEWHOUSE, Washington State University — Jump frequencies of ^{111}In/Cd probe atoms were earlier determined in PAC measurements on binary In_3La, In_3Pr, Sn_3La and other phases having the $L1_2$ structure [1]. In the present work, jump frequencies were measured for two kinds of pseudo-binary phases, the first having a mix of lanthanide elements, $In_3(La_{1-x}Pr_x)$, and the second a mix of sp-elements, $(In_{1-x}Sn_x)_3La$. Measurements exhibit modest inhomogeneous broadening that was greatest for $x \sim 0.5$, indicating that mixed elements were located more or less at random on their sublattice. The jumps detected are of probe atoms on the In or (In,Sn) sublattice. For both kinds of pseudo-binary phases, it was found that the jump frequency decreased rapidly with increasing x. However, the observed decrease was much more rapid for (In,Sn) mixing than for (La,Pr) mixing. Thus, it is found that the presence of solutes on the diffusion sublattice itself has a more profound effect on the jump frequency. Further systematics will be presented and discussed. *Supported in part by the NSF under grant DMR 09-04096 (Metals Program).*

[1] G.S. Collins et al., Phys. Rev. Lett. 102, 155901 (2009), and refs. therein.

Gary S. Collins
Washington State University

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