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The Log-Lin Metric for Generic Responses in Logarithmic Structures ANTONY J. BOURDILLON, Retired — The generic Log-Lin metric joins experimental quasicrystal data with its ideal structure. How does a periodic probe, *e.g.*an X-ray or electron beam, interact with an 'aperiodic' solid to produce sharp diffraction in geometric space? Based on the structure [1-2], and through its stretching factor in the hierarchic model, quasi-structure factors are expanded in geometric series. The Log-Lin metric is found to be a function of tau^2 and pi [3-4]. The solution is of special value in simulating not only icosahedral structures, but also defective logarithmic solids, and quasicrystals of lower symmetry. The metric, now analyzed and simulated, enables consistent measurement from the atomic scale to high order superclusters. It is essential in any wave interaction with logarithmic solids. The factor applies to physical clusters of extremely dense, binary, hard-sphere, icosahedral, unit cells.

[1] Bourdillon, A.J., *Micron,* **51** 21-25 (2013): doi: 10.1016/j.micron.2013.06.004.
[2] Bourdillon, A.J. APS March Meeting, Baltimore, March 18-22 (2013) session W43.
[3] Bourdillon, A.J., *J. Mod. Phys.* **5** 1079-1084 (2014): doi.org/10.4236/jmp.2014.512109.
[4] APS Far West Section Meeting, Reno, October 24-25 (2014)

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