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The adsorption geometries of C60 monolayer on Ag(111) and Au(111)[1] RENEE DIEHL, HEEKEUN SHIN, Penn State University, KATARIINA PUSSI, Lappeenranta University of Technology — C_{60} films on metal surfaces are of particular interest as model van der Waals systems, and for applications such as molecular electronics. The electronic properties of these films are known to depend strongly on their structures and the relative molecular orientations of the C_{60} molecules, yet there are few detailed structure determinations for C_{60} films. When grown at room temperature and annealed to a sufficiently high temperature, C_{60} on Au(111) and Ag(111) form $(2\sqrt{3} \times 2\sqrt{3})R30°$ structures with one C_{60} molecule per unit cell. We present a LEED study of their surface geometries, which are similar in some ways, but differ in others. They both form vacancy site structures that are thermally activated, they both form monolayers that are composed of a mixture of hex-down and 6:6 bond down molecules. The details of the 6:6 bond molecule geometries are different on both substrates, and the temperature dependence of the mixture is different.

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