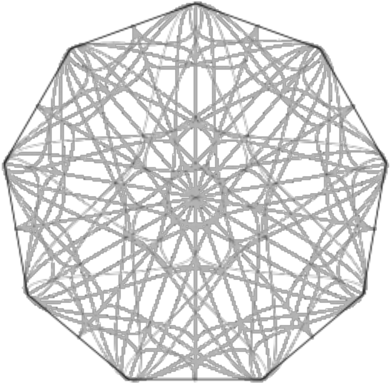

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Let $S$ be a closed surface with a negatively curved Riemannian metric and consider its unit tangent bundle $T^1S$. The *geodesic flow* on $T^1S$ is the flow $\phi^t$ that takes the time-0 tangent of each unit-speed geodesic $\gamma$ to its time-$t$ tangent at time $t$, i.e. $\phi^t(\gamma'(0)) = \gamma'(t)$. In particular, the orbits of the geodesic flow are in one-to-one correspondence with the geodesics on $S$.

From the general theory of *Anosov flows*, it is known that the geodesic flow admits a *Markov partition*. These can be thought of as directed graphs $\Phi$ that 'remember' the dynamics of the flow. For example, the closed orbits of the flow are in correspondence with the cycles of $\Phi$. One can then attempt to study the closed geodesics on $S$ by just studying such a graph $\Phi$.

However, one difficulty with this approach was that explicit examples of such Markov partitions were hard to come by. In a recent preprint, I reduced this barrier by constructing a Markov partition given any multicurve that cuts $S$ up into $n \geq 4$-gons. The corresponding graph is determined by its projection in each $n$-gon, for which a recipe can be given. The picture on the left is such a projected graph for $n = 9$.