1042-53-130 **Valera Berestovskii** (berestov@ofim.oscsbras.ru), Omsk Branch of Sobolev Institute of Math., ul. Pevtsova, 13, Omsk, 644099, Russia, and **Conrad Plaut*** (cplaut@math.utk.edu), University of Tennessee, Ayres Hall 121, Knoxville, TN 37919. *Covering R-trees.*

I will discuss our theorem that for every geodesic space X there is a unique (up to isometry) R-tree, called the covering R-tree of X, with a function $\overline{\phi} : \overline{X} \to X$ that is a *metric covering map* in the sense that it is length-preserving and has unique lifting of rectifiable curves (but may not be a local homeomorphism). The mapping $\overline{\phi}$ is the "mother of all metric covering maps" in the sense that all metric covers, including the traditional universal cover of a semi-locally simply connected geodesic space, may be derived from it. I will discuss the general construction and basic theorems for both the covering R-tree and the uniform universal covering map (UU-cover), which likewise exists for every geodesic space. I will then consider the special cases of the Sierpin'ski gasket and carpet, and the Menger sponge. All three fractals have the same covering R-tree which is the previously investigated "universal" R-tree $A_{\mathfrak{c}}$. Moreover, for these and at least one other non-manifold of interest to analysts, there is a metric covering by a CAT(0) space such that the map is a metric fibration in the sense that Lipschitz mappings from reasonable simply connected domains can be lifted. (Received August 15, 2008)