

Hawking predicted that at late times after a black hole forms the particles that are produced will be in a thermal distribution. The approach to that late time thermal distribution is investigated. It is shown that in both two and four dimensions an approximation similar to a stationary phase approximation gives Hawking's prediction but fails to give correctly the next to leading order (in time) contribution to the radiation. It is further shown that the correct next to leading order contribution is local, but that there are nonlocal terms in all higher order contributions.