1018-05-60 **Hiro-Fumi Yamada*** (yamada@math.ucdavis.edu), Department of Mathematics, UC Davis, One Shields Avenue, Davis, CA 95616. *Elementary divisors of Cartan matrices for symmetric groups.*

The purpose of this talk is to give a simple expression of the elementary divisors of the Cartan matrices for the symmetric group.

Let $G = S_n$ and k be an algebraically closed field of characteristic $p > 0$. The group algebra kG affords the left regular representation and is a direct sum of indecomposable representations. There is a natural one-to-one correspondence between the equivalence classes of indecomposable summands of kG and those of irreducible representations; both are parametrized by the p-regular partitions of n. The Cartan matrix is, by definition, $C = (c_{\lambda\mu})$, where $c_{\lambda\mu}$ is the multiplicity of the irreducible representation D_μ occurring as a composition factor of the indecomposable summand U_λ of kG. We give a formula for the elementary divisors of C by using the one-to-one correspondence between the p-regular partitions and the p-class regular partitions. This is a joint work with Katsuhiro Uno. (Received February 21, 2006)