998-60-151 **Jose Alfredo Lopez-Mimbela*** (jalfredo@cimat.mx), Apartado postal 402, 36000 Guanajuato, Gto., Mexico. *Existence of local time and Tanaka formula for a two-type superprocess.*

Consider a superprocess $X = (X_t)_t$ whose values are finite measures on $S = \{1,2\} \times R^d$, and $Ee^{-\int_S \phi(z) X_t(dz)} = e^{-\int_S u_t(z)\mu(dz)}$, where μ is a given finite measure on S, $\phi : S \to [0,\infty)$ is bounded and measurable, and u_t solves the equation $\partial_t u_t(i,x) = Au_t(i,x) - C_i u_t^2(i,x)$, $u_0 = \phi$. Here $C_i > 0$, $A\phi(i,x) = \Delta_{\alpha_i}\phi(i,x) + V_i \sum_{j=1}^2 (m_{ij} - \delta_{ij})\phi(j,x)$, $(i,x) \in S$, Δ_{α_i} denotes the generator of the symmetric α_i-stable process, $V_i > 0$ and $m_{ij} > 0$ with $\sum_{j=1}^2 m_{ij} = 1$, $i = 1,2$. We prove that X has local time if $d < 2\min\{\alpha_1, \alpha_2\}$ and μ has bounded density with respect to a reference measure on S. We also give a Tanaka formula-like representation of the local time. (Received February 23, 2004)