Kerr Effect in Superconductor. SANG BOO NAM — A magnetic field $H$ is to make the time reversal symmetry of the system be broken. Using the formulation [1], neglecting $H$ dependence of $\Delta(T)$ and for the pair cyclotron frequency $\Omega = (2e/2m)H/c$ less than the photon frequency $2c/\lambda$, the Kerr angle is obtained as $\theta_K(T) = \theta_K(0)[\Delta(T)/\Delta(0)]\tanh[\Delta(T)/2k_B T]$, where $\theta_K(0) = A \lambda^3 \Omega / (8 \pi^3 c N L^2)$, $A = (3\lambda/4, L)/\xi_{BCS}$ in the (non-local, local) limit, with mean free path length $L$ and BCS coherence length $\xi_{BCS} = h v_F/\pi \Delta(0)$. $N = (n-1) n (n+1)$ with index of refraction $n$. For Sr2RuO4 [2], $\lambda = 1550 \text{ nm}$, $L = 1 \mu \text{m}$, $v_F = 100 \text{Km/s}$, $n=3$ and the London penetration depth length $\lambda_L = 3 \mu \text{m}$ [3], $T_C = 1.5 \text{ K}$. In the strong coupling case [4], $\Delta(0) = 2T_C$. The effective $H$ is sum of the external applied and internal (by pair current) magnetic fields, to maintain the fluxoid quantization. After cooling a sample in the external magnetic field, turning it off, before warming a sample, is not necessary to make $H$ vanish, since the pair current was set in a sample during cooling it. Then, $H_{C2} = 750 \text{ Gauss}$ [3], in the normal vortex core, is considered as $H$. With all values of parameters given above, we obtain $\theta_K(0) = (44, 38) \text{ nrad}$ in the (non-local, local) limit in satisfactory agreement with data of 65nrad [2]. The fluxoid quantization makes the Kerr angle same within a range of the external applied magnetic fields. [1] Nam, PR. 156, 470, 487 (67). [2] Xia et al., PRL. 97, 167002 (06). [3] Mackenzie et al., RMP. 75, 657 (2003). [4] Nam, PL. A193, 111 (94); (E) ibid. A197, 458 (95).