1077-35-713 **Daniele Garrisi*** (`garrisi@postech.ac.kr`), Namgu, Hyojadong, San 31, POSTECH, Mathematical Science Building #302, Pohang, Gyeongbuk 790784, South Korea. *Standing-waves solutions to a system of non-linear Klein-Gordon equations with a sub-critical growth non-linearity.* Preliminary report.

We consider a system of non-linear Klein-Gordon equations

$$\partial_{tt}v_j - \Delta v_j + m_j^2 v_j + \partial_{v_j} F(v) = 0, \quad 1 \leq j \leq k.$$

We assume that $F \in C^1(\mathbb{R}^k, \mathbb{R})$ and $F(0) = 0$. Moreover,

$$|DF(u)| \leq c(|u|^{p-1} + |u|^{q-1}), \quad u \in \mathbb{R}^k$$

$$F(u) + \frac{1}{2}\sum_{j=1}^{k} m_j^2 u_j^2 \geq 0$$

and $m_j > 0$ for every j. Standing-waves k-uples solutions to the NLKG

$$v_j(t,x) = e^{-i\omega_j t} u_j(x), \quad (u_j, \omega_j) \in H^1(\mathbb{R}^N, \mathbb{R}) \times \mathbb{R}$$

correspond to solutions of the elliptic systems

$$-\Delta u_j + (m_j^2 - \omega_j^2) u_j + \partial_j F(u) = 0, \quad 1 \leq j \leq k.$$

We show that there is a solution (u, ω) such that u_j is radially symmetric and $\omega_j \in (0, m_j)$. (Received September 11, 2011)