1040-35-73 **P. Braz e Silva*** (pablo@dmat.ufpe.br), UFPE, Departamento de Matematica, Recife, PE 50740-540, Brazil, and **P. Zingano**, UFRGS, Departamento de Matematica pura e aplicada, Porto Alegre, RS 91509-900, Brazil. *Some asymptotic properties for convection-diffusion equations.*

We discuss some asymptotic properties for solutions of general convection-diffusion equations

$$u_t + \mathrm{div} f(x,t,u) = \mathrm{div}(A(x,t,u)\nabla u), \qquad x \in R^n,\ t > 0,$$

with initial data $u(x,0) = u_0(x) \in L^p(R^n)$, $1 \le p < \infty$. Under suitable assumptions on f and A, we show

$$\|u(\cdot,t)\|_{L^{2p}} \le C(n,p)\|u_0\|_{L^p}(t\mu(t))^{-\frac{n}{4p}},$$

where $\mu(t)$ is a positive non-increasing function such that $\langle A(x,t,\xi)\xi,\xi\rangle \ge \mu(t)|\xi|^2$, $\forall\, \xi \in R^n$. Moreover, we discuss how these bounds can be used to obtain an L^∞ estimate

$$\|u(\cdot,t)\|_\infty \ \le \ K(n,p)\|u_0\|_p(t\mu(t))^{-\frac{n}{2p}}.$$

Some interesting applications of these properties are also mentioned. (Received January 24, 2008)