1138-35-399   **Shangbing Ai*** (`ais@uah.edu`), Department of Mathematical Sciences, University of Alabama in Huntsville, Huntsville, AL 35899, and **Craig Cowan** (`craig.cowan@umanitoba.ca`). *Perturbation of the Lane-Emden equation $\Delta u + u^p = 0$ in the critical case of $p = \frac{n+2}{n-2}$.* Preliminary report.

In this paper we use the ODE technique to examine the solvability of (positive classical solution)

$$-\Delta u(r) = (1 + g(r))u(r)^p \qquad 0 < r < R,$$

$$u(R) = 0$$

where $p = \frac{n+2}{n-2}$. In particular, we show the existence of solutions for

$$-\Delta u(r) = (1 + br)u(r)^p \qquad 0 < r < 1,$$

$$u(1) = 0$$

for any $b > 0$. (Received February 13, 2018)