



## FREE BOUNDARY PROBLEM FOR A SUBLINEAR ELLIPTIC EQUATION

M. FOTOUHI

*Department of Mathematical Sciences, Sharif University of Technology*  
*fotouhi@sharif.edu*

ABSTRACT. We study solutions and the free boundary  $\partial\{\pm u > 0\}$  of the sublinear equation

$$\Delta u = f(x, u),$$

from a regularity point of view. We assume that  $f(x, u) \approx |u|^q$  for some  $0 < q < 1$ .

---

1991 *Mathematics Subject Classification.* Primary 35B65; Secondary 35J61, 35R35.

*Key words and phrases.* Sublinear elliptic equation, Free boundary, Regularity.