1071-34-198 **Adolfo J. Rumbos*** (arumbos@pomona.edu), Department of Mathematics, Pomona College, 610 N. College Avenue, Claremont, CA 91711, and **David A. Bliss**. *Periodic Boundary Value Problems and the Dancer–Fučík Spectrum Under Conditions of Resonance.* Preliminary report.

We prove the existence of solutions to the nonlinear 2π-periodic problem

$$u''(x) + \mu u^+(x) - \nu u^-(x) + g(x, u(x)) = f(x)\,, \quad x \in (0, 2\pi)\,,$$
$$u(0) - u(2\pi) = 0,\;\; u'(0) - u'(2\pi) = 0,$$

where the point (μ, ν) lies in the Dancer–Fučík spectrum, with

$$0 < \frac{4}{9}\mu \leqslant \nu < \mu < (m+1)^2,$$

for some natural number m, and the nonlinearity $g(x, \xi)$ is bounded with primitive, $G(x, \xi)$, satisfying a generalized Landesman-Lazer type condition introduced by Tomiczek in 2005. We use variational methods based on the generalization of the Saddle Point Theorem of Rabinowitz. (Received March 05, 2011)