

EDITORIAL NOTE

The Editors have been notified that the paper “Nonlocal Robin problem for elliptic second order equations in a plane domain with a boundary corner point”, Appl. Math. (Warsaw) 38 (2011), no. 4, 369–411, by M. Borsuk and K. Żyjewski contains significant parts from the paper by K. Żyjewski entitled “Nonlocal Robin problem in a plane domain with a boundary corner point”, earlier published in Ann. Univ. Paedagog. Crac. Stud. Math. 10 (2011), 5–34, but not referred to in the Appl. Math. paper. The Editors express their disapproval of such practises and have agreed to publish the following Addendum written by the authors.

Addendum to the paper “Nonlocal Robin problem for elliptic second order equations in a plane domain with a boundary corner point”

(Appl. Math. (Warsaw) 38 (2011), 369–411)
by M. Borsuk and K. Żyjewski

In response to the editor’s request, we want to add a reference that should have been included in the original bibliography:

- [12] K. Żyjewski, *Nonlocal Robin problem in a plane domain with a boundary corner point*, Ann. Univ. Paedagog. Crac. Stud. Math. 10 (2011), 5–34.

Also we wish to compare this reference with our article. The two articles have the same structure and appearance. Both follow the ideas presented by M. Borsuk and V. Kondratiev [1] and have the same components that are extended to the nonlocal problem (L): weight inequalities, investigation of the corresponding eigenvalue problem and of the power modulus of continuity for weak solutions at an angular point.

However, the two articles are different. The essential difference between them lies in considering completely different eigenvalue problems (EVP). In [12] we investigated (EVP) without the nonlocal element $b\psi(0)$, which does not correspond to the nonlocal problem (L). This was because we could not prove the Friedrichs–Wirtinger type inequality for the nonlocal (EVP) using

the variational principle. The essential functionals in the case of the nonlocal problem are not symmetrical.

After writing [12] we changed our approach and derived the appropriate inequality for the nonlocal (EVP) without applying the variational principle. Taking into consideration the nonlocal term in (EVP) permitted us to more accurately express the character of the behaviour of a weak solution of problem (L) in a neighbourhood of the angular point.

The statements of Theorem 2.4 in our paper and in [12] are the same if $b = 0$, where the problems are local, whereas for the nonlocal problem, i.e. $b > 0$, they differ in the component B which contains a nonlocal element $b \frac{\psi(0)}{\psi(\omega_0/2)}$. The different (EVP) required a different Friedrichs–Wirtinger type inequality with a more exact constant, which influenced the main theorem.

Consequently, we obtained the more precise estimate $|u(x)| = O(|x|^\alpha)$ for a weak solution in a neighbourhood of the boundary corner point with a **better** exponent α (Theorem 1.5). Presentation of the improved results would not be possible without giving proofs, which unfortunately overlap with those presented in [12], but are based on a new Friedrichs–Wirtinger type inequality (this is a major difference!).

In addition, this gave us an opportunity to consider specific estimates for a weak solution of problem (L) near an angular point (Theorems 1.7 and 1.8, which do not have counterparts in [12]). We also added an example (Section 8) which shows that the Dini continuity assumption on the leading coefficients is essential. Moreover, we emphasize that Section 3, “Maximum principle” is not present in [12]. The theorem on local estimates at the boundary and global and local estimates of the Dirichlet integral are more precise in comparison with [12] but were obtained under more specific assumptions. In addition, we gave additional Theorems 5.2, 5.3, 6.2, 6.3.

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