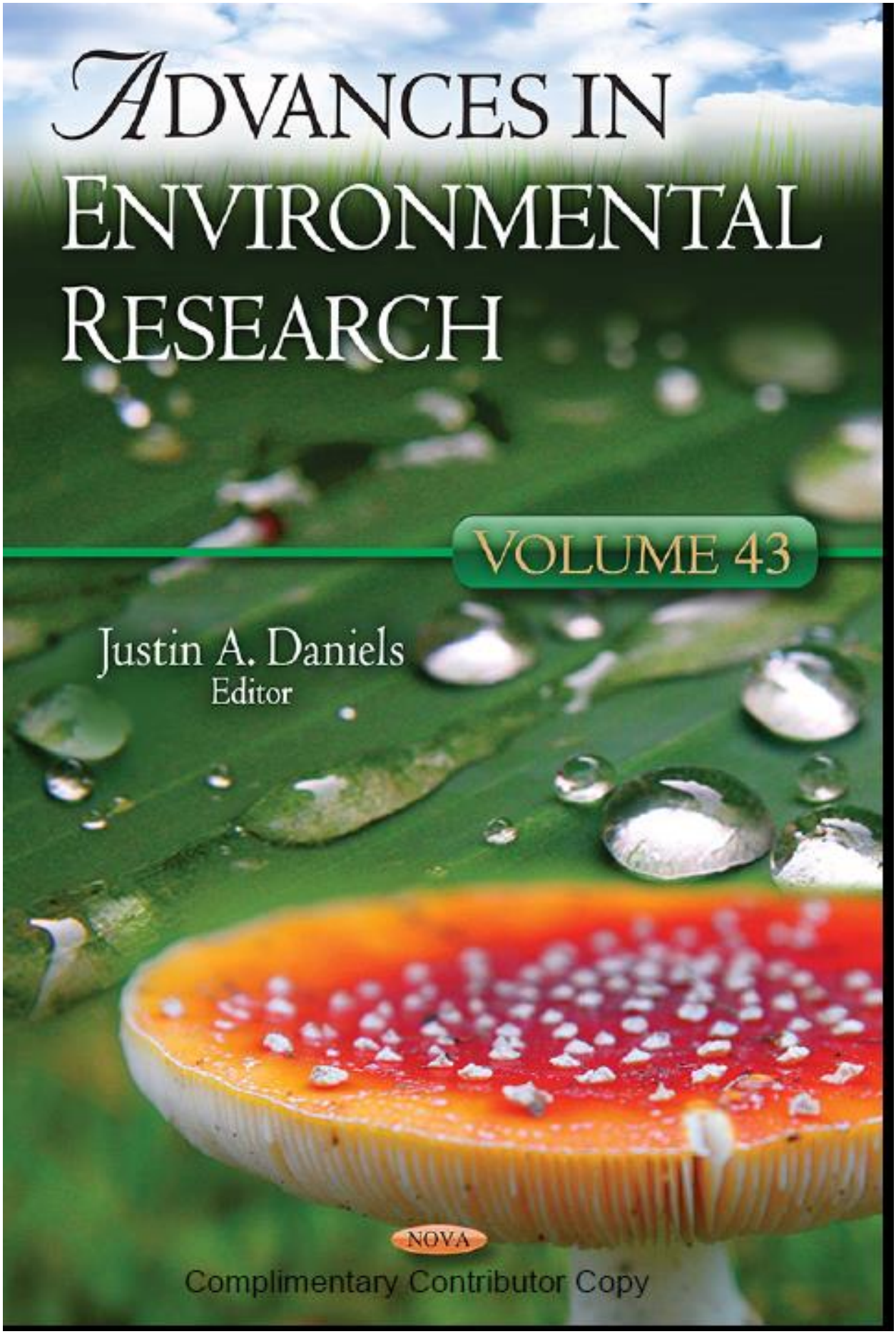
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Chapter 6

VARIABILITY ASSESSMENT FOR LITHOGENIC AND ANTHROPOGENIC DISTRIBUTION OF TRACE AND MACROELEMENTS IN WATER, SEDIMENT AND SOIL SAMPLES. CASE STUDY: BREGALNICA RIVER BASIN, REPUBLIC OF MACEDONIA

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ABSTRACT

The distribution of certain elements, which in higher content represents hazard to the environment, causes certain unwanted consequences on human health. Therefore, the environmental monitoring not only for the lithogenic but also for the anthropogenic distribution leads to determination of the main hot spots in environment. The anthropogenic activities for exploitation of natural resources and their processing represent a global problem of pollution of the environment. Bregalnica River Basin in the Republic of Macedonia was selected as a study area with the presence of three potential emission sources: lead and zinc mines ("Zletovo" and "Sasa" mines) and copper mine (Bučim mine). Lithogenic and anthropogenic distribution of 69 elements (Ag, As, Al, Au, B, Ba, Be, Bi, Br, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, I, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, Os, P, Pb, Pd, Pr, Pt, Rb, Re, Rh, Ru, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Ti, Th, Tl, Tm, V, W, Y, Yb, Zn and Zr) was evaluated in river water, sediment and alluvial and automorphic soil from Bregalnica River Basin in the Eastern part of the Republic of Macedonia. The monitoring was conducted in the period of 2012-2013. Determination of the total elements contents was

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