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Space environment (natural and artificial) — Operational estimation of the solar wind energy input into the Earth's magnetosphere by means of the ground-based magnetic polar cap (*PC*) index



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Foreword

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Introduction

The polar cap magnetic activity *PC* index was introduced as a measure of the magnetic activity generated in the Earth's polar caps by interplanetary electric field and is regarded at present as a proxy of the solar wind energy input into the magnetosphere in course of solar wind – magnetosphere coupling.

The *PC* index can be required as input parameter for monitoring and nowcasting the space weather influence on various characteristics of magnetosphere and high-latitude ionosphere.

The *PC* index can be applicable for a variety of engineering and scientific domains and can be used to monitor the state of the magnetosphere and high-latitude ionosphere to solve the problems of navigation, radio-connection and induced currents typical of high-latitude regions during magnetospheric disturbances.