Simple model for the determination of an indoor radon concentration

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One of the topical questions of indoor radon diagnostic is the correct determination of the radon concentration in house. The effort to prediction of indoor radon concentration, using construction details of building, climate characteristics and parameters of subsoil, leaded to creation of the different models. A simple analytical model was created, where the radon concentration is a function of two parameters: the radon entry rate and the air exchange rate. Both parameters in this model are the function of many different meteorological parameters, but from all of them the main role has the pressure difference between indoor and outdoor air. In general, the pressure difference is dominantly caused the by indoor-outdoor temperature difference and by the wind. The special case, when radon entry rate is constant, has been studied in our contribution. The ventilation rate has been described by a model connecting the meteorological parameters and parameters of the building. The radon variations calculated by this simple model have been compared with measured radon variations. The results of tests show that the measured records and calculated radon concentrations are in a good agreement.