**Information for the Initial Modeling Exercise by the Jack Rabbit III Modelers Working Group**

**Model name**: PUMA (no version numbers)

**Deviations from Table 1**: All values are kept intact.

**Output values**: Arc-max values using the definition in the instructions.

**Modeling Uncertainties**:

1. The suggested alterations of Pasquill stability classes for DT4, FLADIS16 and FLADIS24 were tested. Note, the Monin-Obukhov length was set to 200 m in FLADIS24 to transit from instable to neutral conditions.
2. Adjustments of the friction velocities to obtain a wind profile in agreement with measured average wind speeds at different heights. These adjustments were in general minor (1-12%). Fladis trial 16 needed the largest alteration of u\* (22%) to obtain the measured wind profile.

Results from simulations using variations of stability and u\* are provided together with all the other results in the same attached excel-file.

**Additional comment**:

1. The equivalent source term was used for Desert Tortoise.
2. A custom adiabatic jet model for compressed gases was used for the Fladis trials.
3. The large discrepancy between the plume speed and the reported wind speed in DT4 (91% faster plume for the equivalent source term) caused the greatest problem for PUMA since the model lacks inertia of the puffs. This is a major reason for the strong overestimation of the concentration at 100 m distance.

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