Constant SAR of 5 cm ka^{-1} with:
constant BD of 10 cm, constant abundance of 100% and 0% broken foraminifera

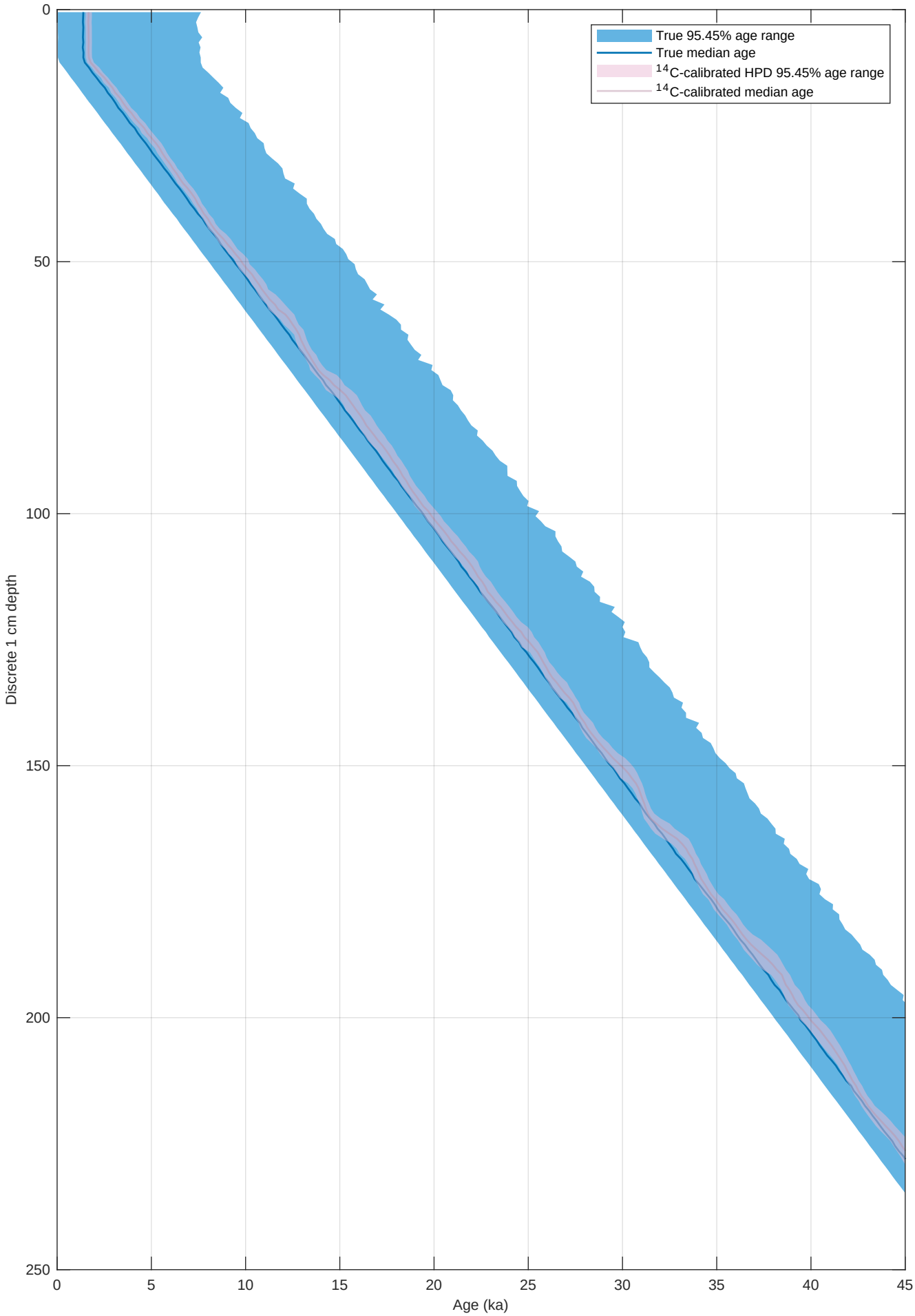

Figure S1. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation scenario with a constant SAR of 5 cm ka-1, constant BD of 10 cm and 0% broken foraminifera.

Constant SAR of 10 cm ka^{-1} with:
constant BD of 10 cm, constant abundance of 100% and 0% broken foraminifera

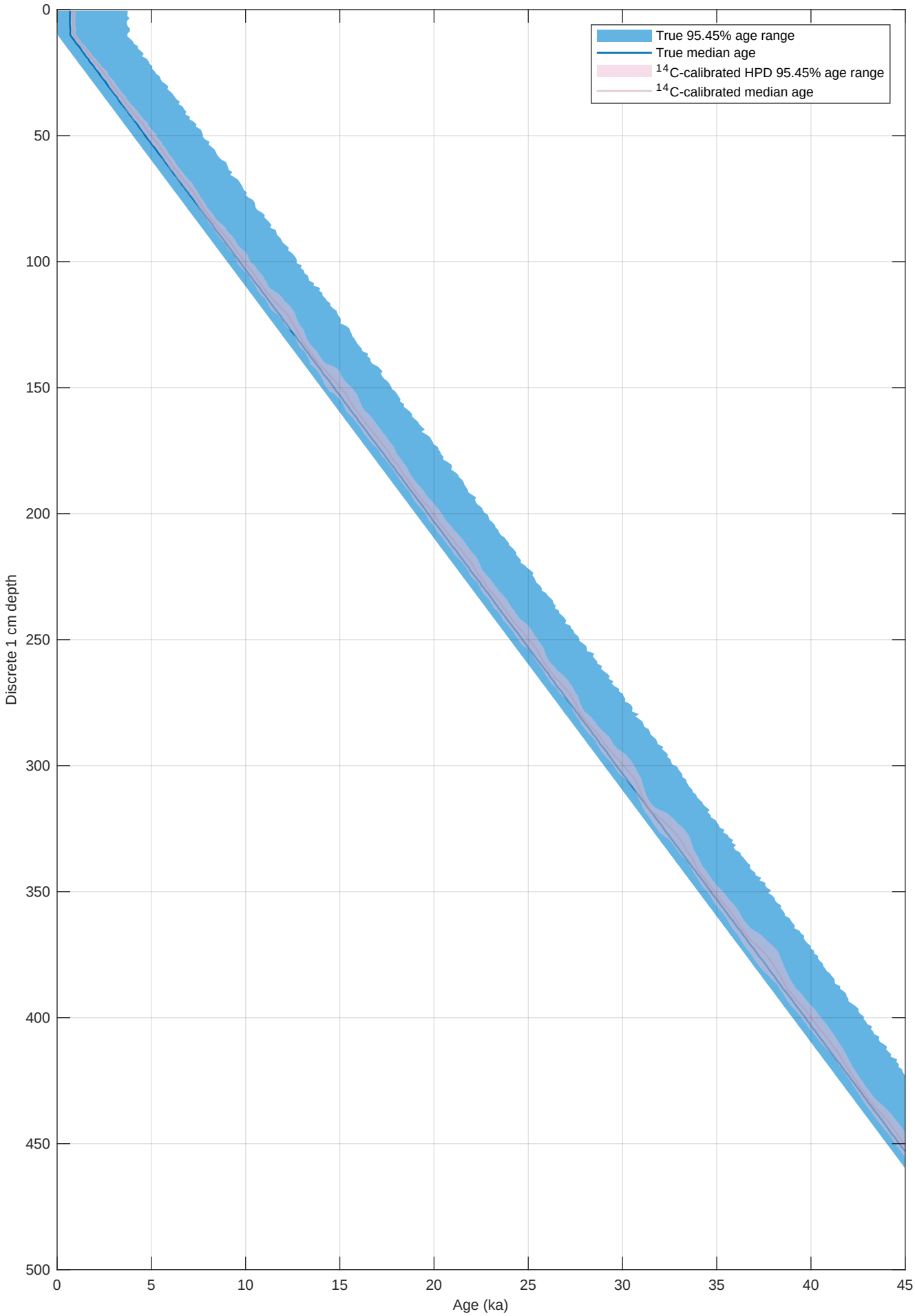

Figure S2. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation scenario with a constant SAR of 10 cm ka-1, constant BD of 10 cm and 0% broken foraminifera.

Constant SAR of 20 cm ka^{-1} with:
constant BD of 10 cm, constant abundance of 100% and 0% broken foraminifera

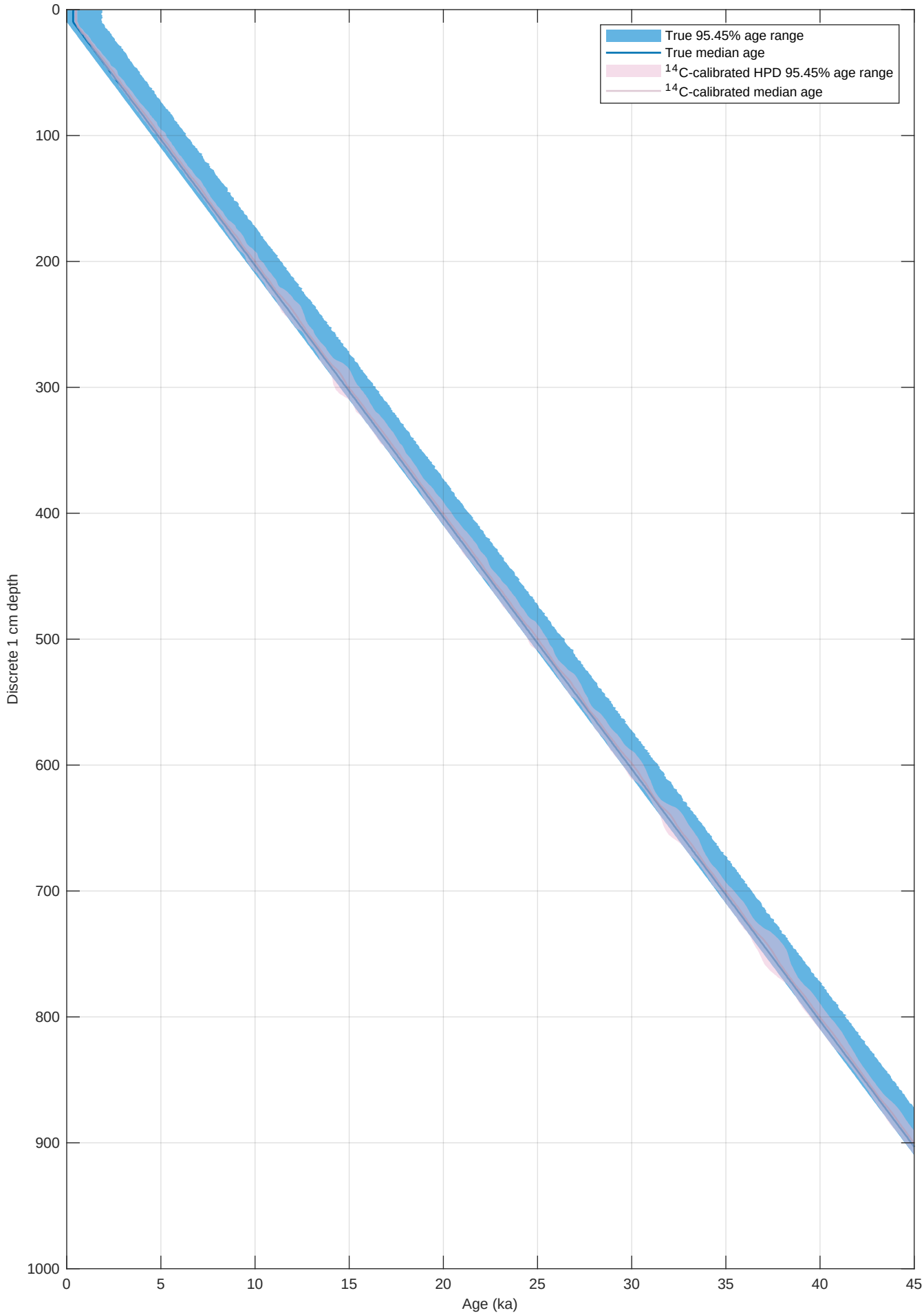

Figure S3. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation scenario with a constant SAR of 20 cm ka-1, constant BD of 10 cm and 0% broken foraminifera.

Constant SAR of 40 cm ka^{-1} with:
constant BD of 10 cm, constant abundance of 100% and 0% broken foraminifera

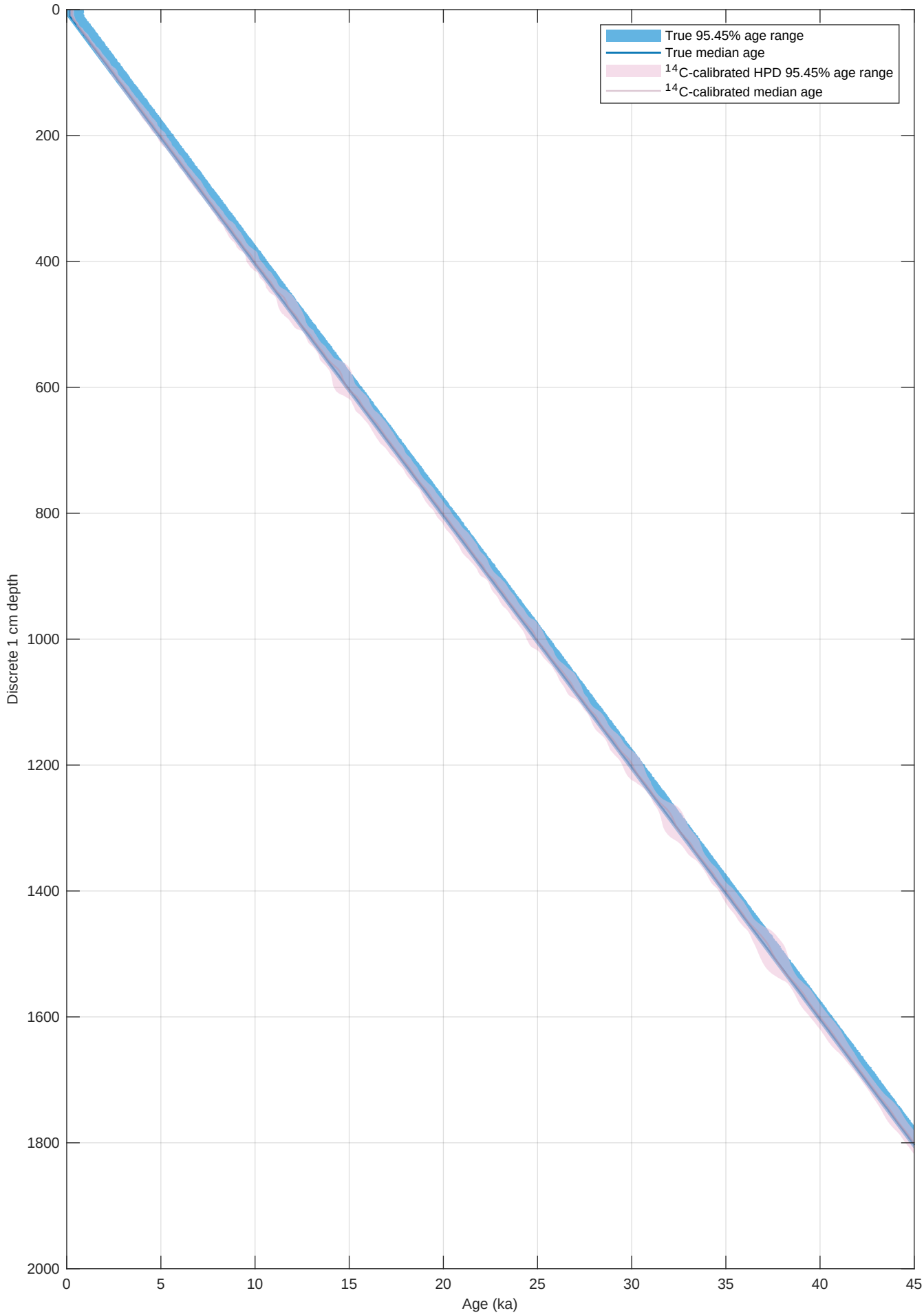

Figure S4. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation scenario with a constant SAR of 40 cm ka-1, constant BD of 10 cm and 0% broken foraminifera.

Constant SAR of 60 cm ka^{-1} with:
constant BD of 10 cm, constant abundance of 100% and 0% broken foraminifera

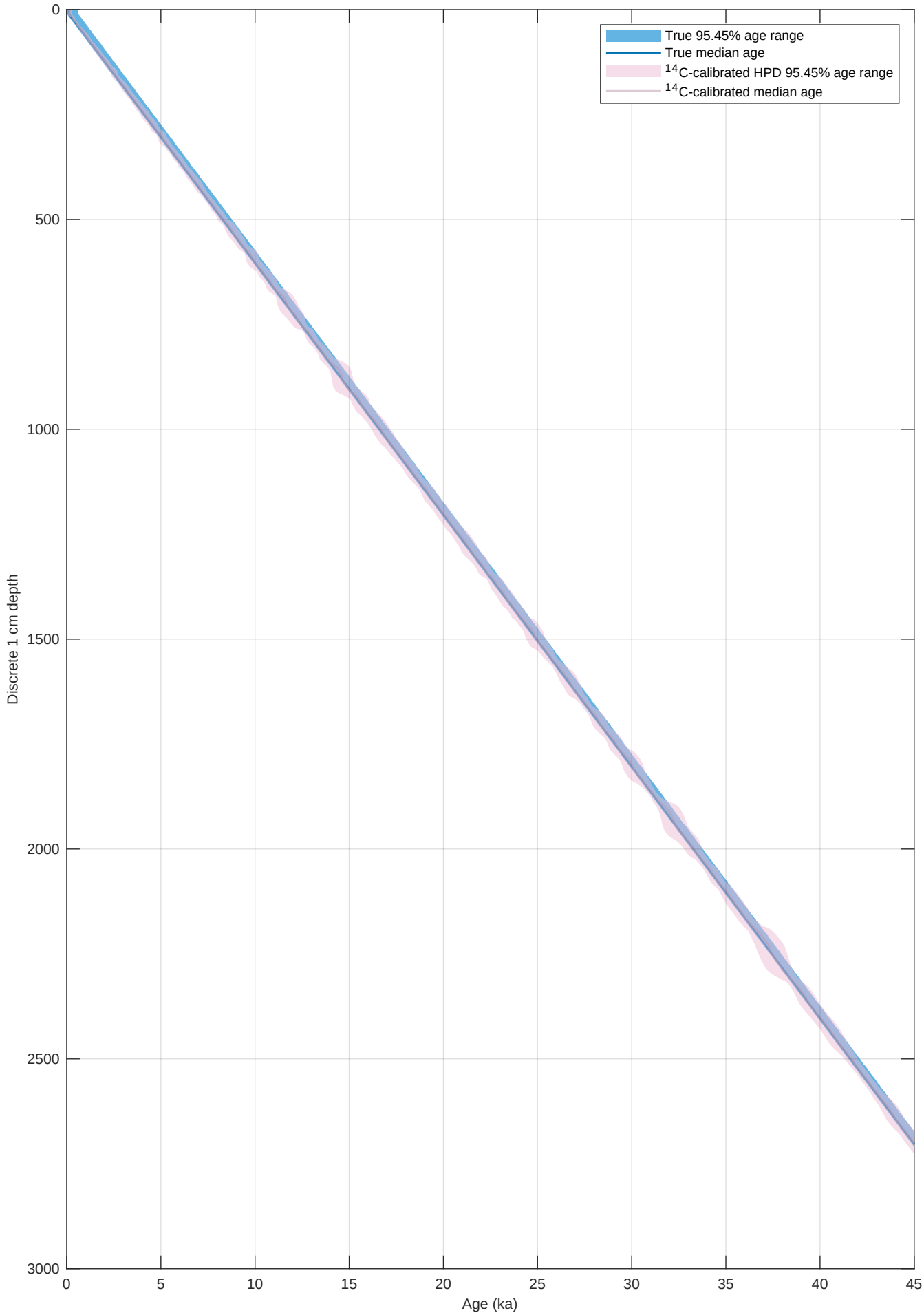

Figure S5. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation scenario with a constant SAR of 60 cm ka-1, constant BD of 10 cm and 0% broken foraminifera.

Constant SAR of 5 cm ka^{-1} with:
constant BD of 10 cm, constant abundance of 100% and 10% broken foraminifera

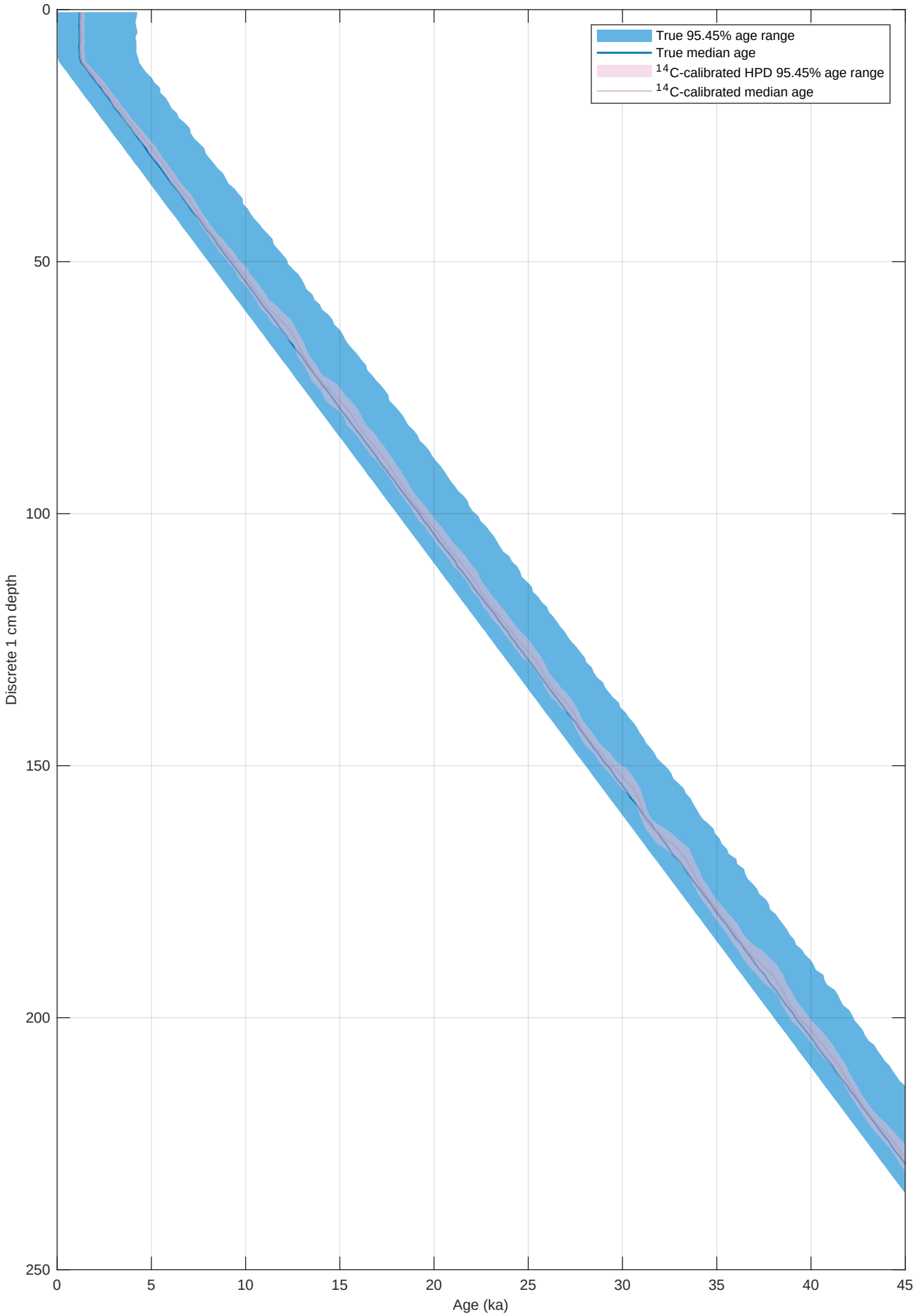

Figure S6. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation scenario with a constant SAR of 5 cm ka-1, constant BD of 10 cm and 10% broken foraminifera.

Constant SAR of 10 cm ka^{-1} with:
constant BD of 10 cm, constant abundance of 100% and 10% broken foraminifera

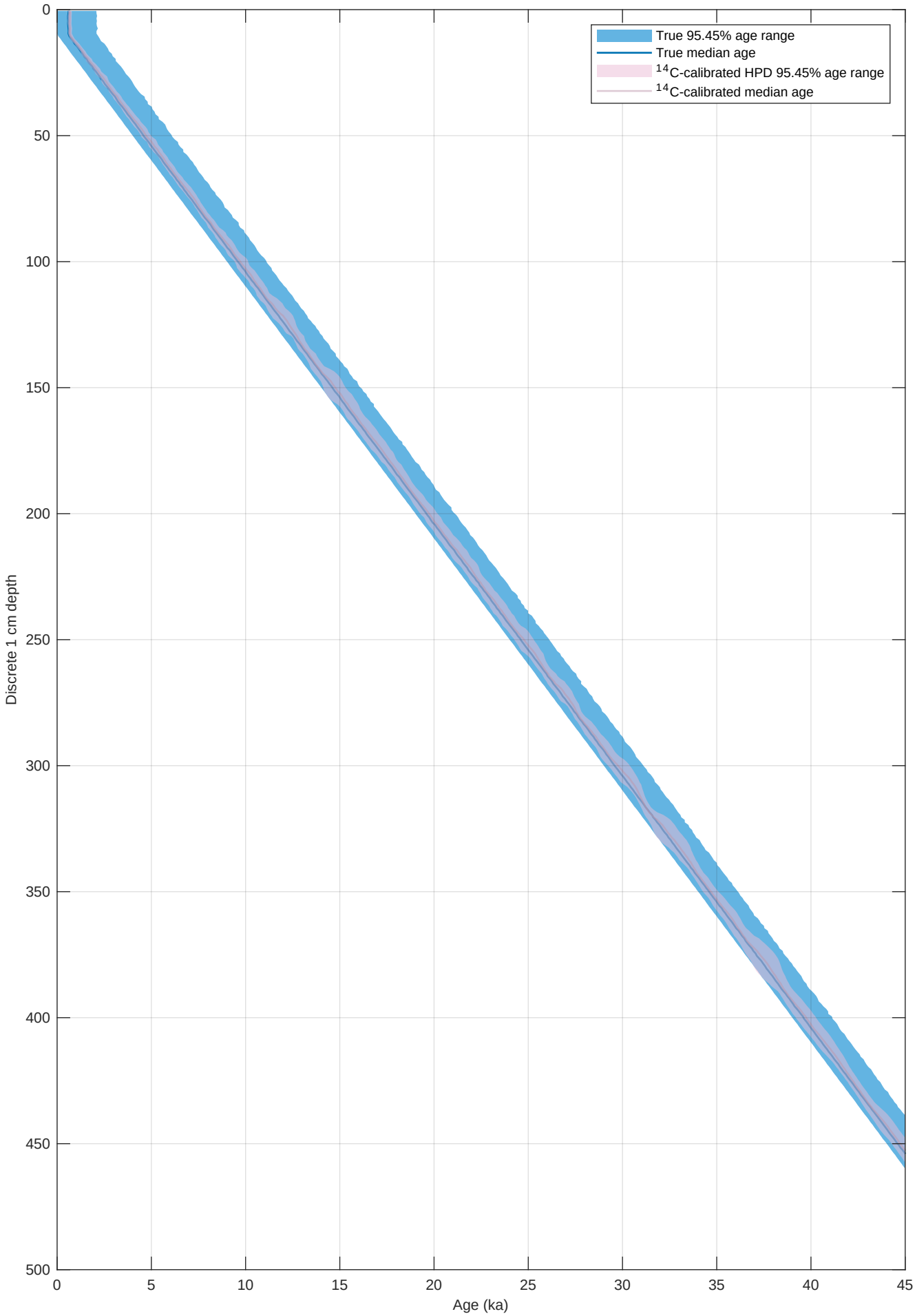

Figure S7. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation scenario with a constant SAR of 10 cm ka-1, constant BD of 10 cm and 10% broken foraminifera.

Constant SAR of 20 cm ka^{-1} with:
constant BD of 10 cm, constant abundance of 100% and 10% broken foraminifera

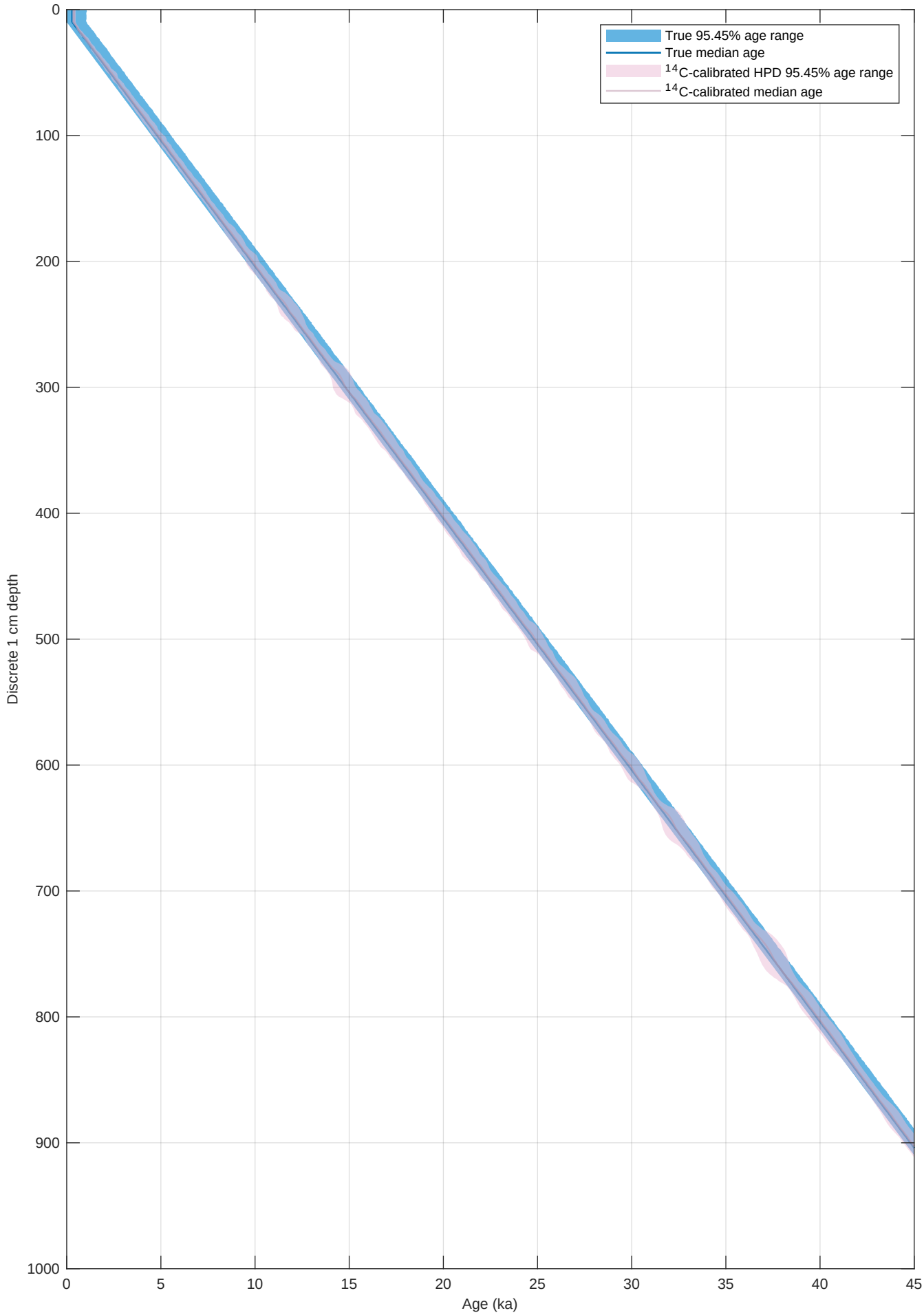

Figure S8. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation scenario with a constant SAR of 20 cm ka-1, constant BD of 10 cm and 10% broken foraminifera.

Constant SAR of 40 cm ka^{-1} with:
constant BD of 10 cm, constant abundance of 100% and 10% broken foraminifera

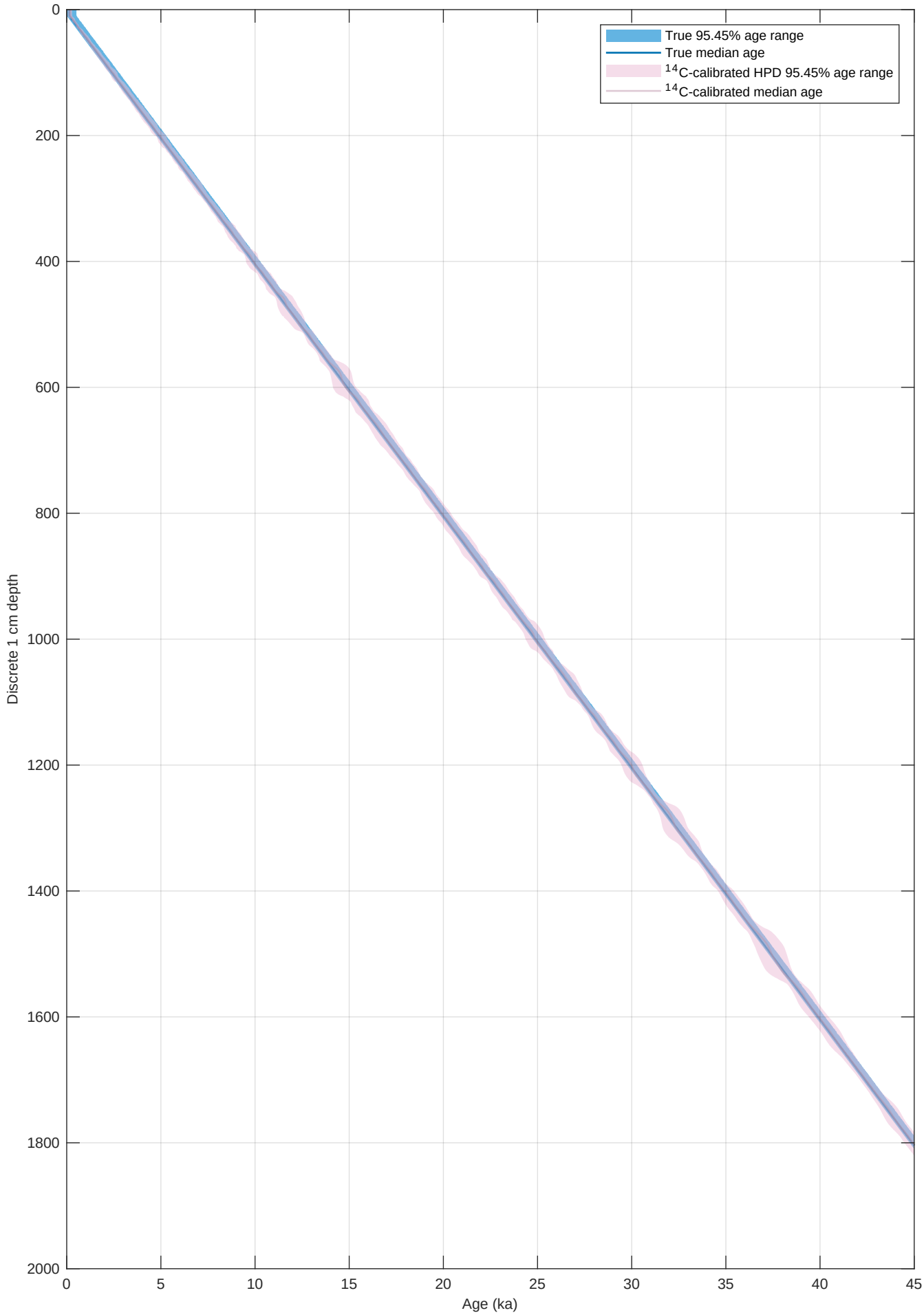

Figure S9. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation with a constant SAR of 40 cm ka-1, constant BD of 10 cm and 10% broken foraminifera.

Constant SAR of 60 cm ka^{-1} with:
constant BD of 10 cm, constant abundance of 100% and 10% broken foraminifera

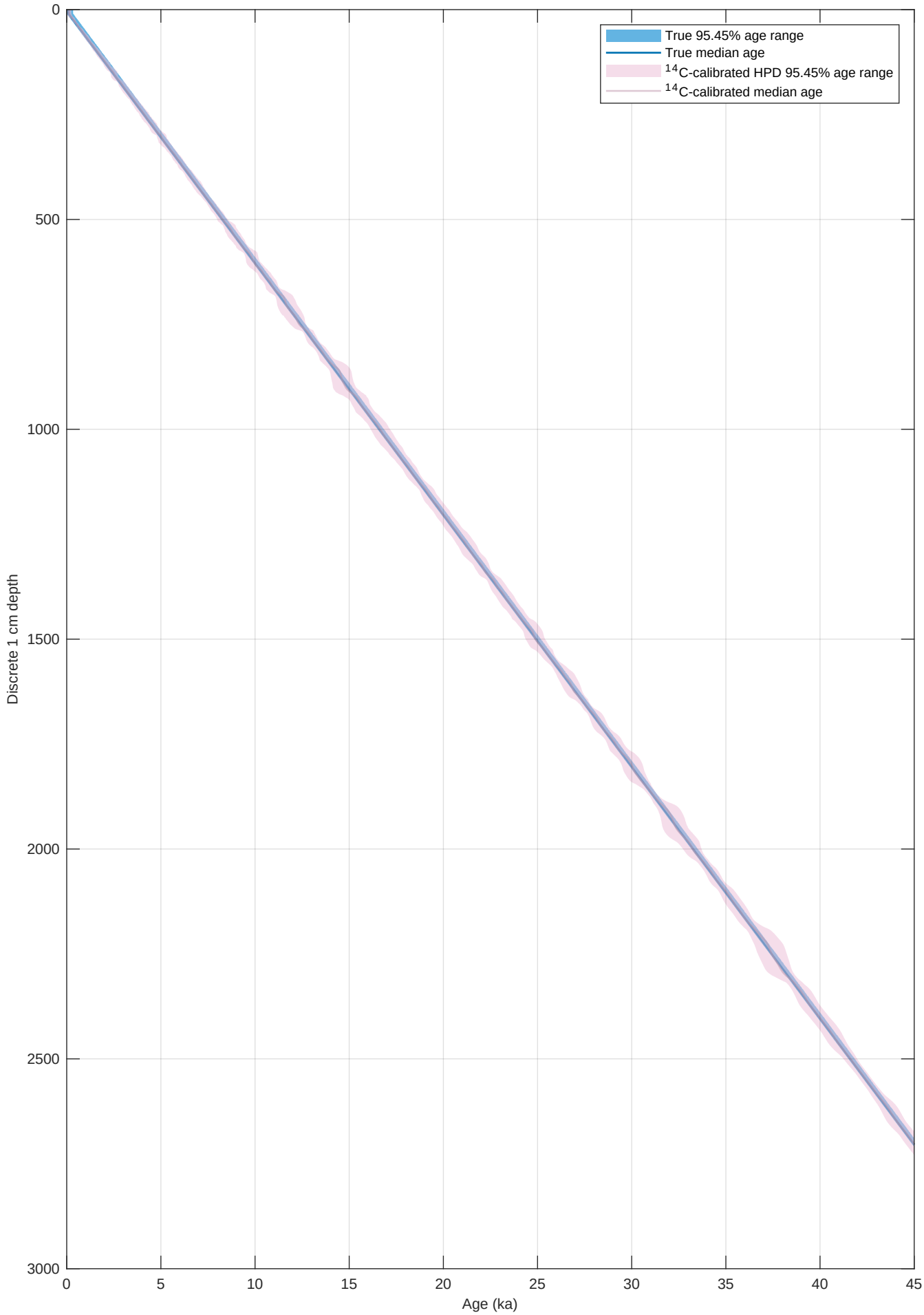

Figure S10. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation scenario with a constant SAR of 60 cm ka-1, constant BD of 10 cm and 10% broken foraminifera.

Simulation output using dynamic input parameters (see Figs. 5a-d) and 10% broken foraminifera

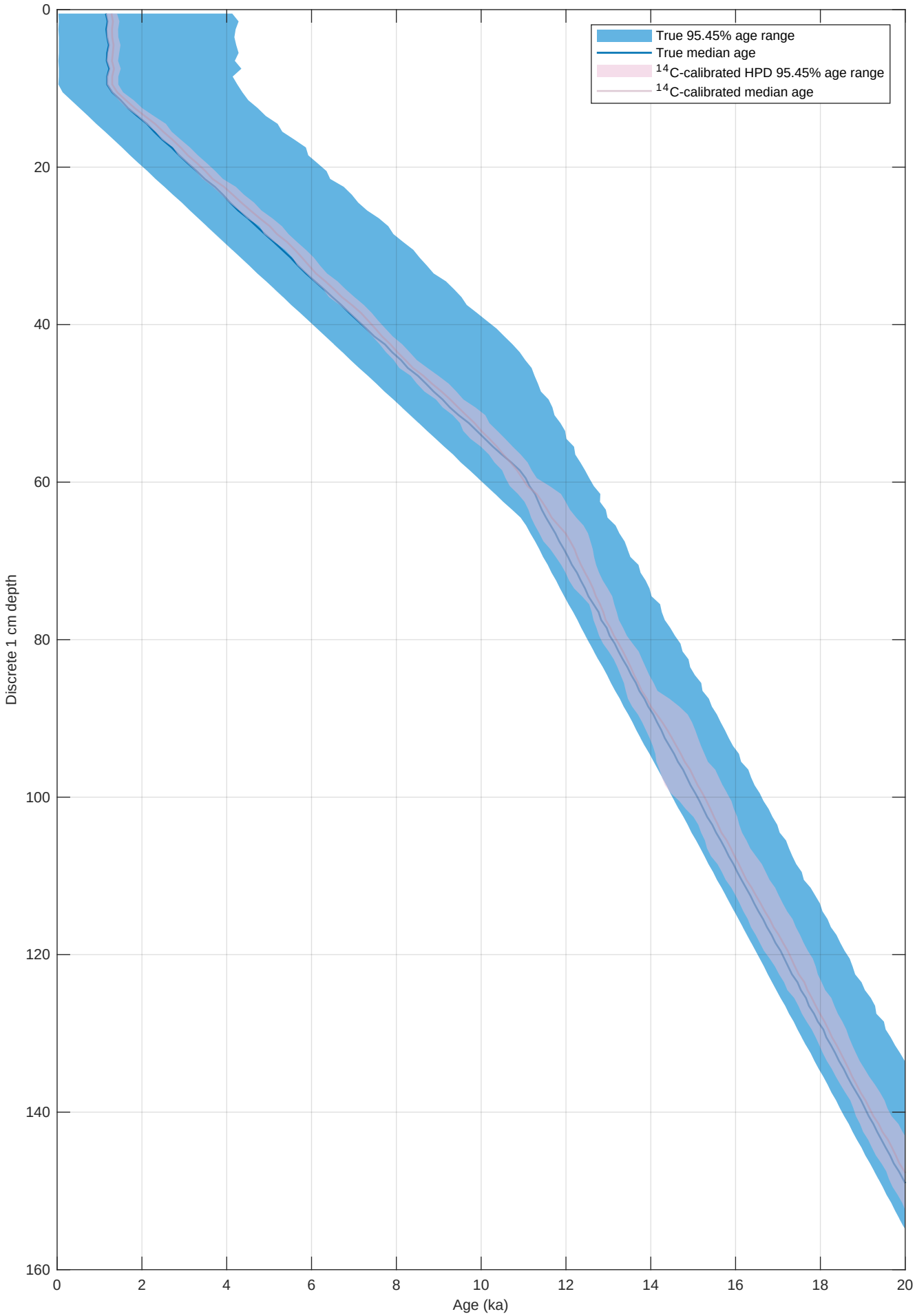

Figure S11. Simulated 1 cm discrete-depth 95.45% true age range (light blue), true median age (dark blue), ^{14}C-calibrated 95.45% HPD age range (light pink) and ^{14}C-calibrated median age (dark pink for whole foraminifera in a simulation scenario using the dynamic inputs detailed in Fig. 5a, 5b, 5c and 5d and 10% broken foraminifera.