Erratum: Bridging particle deformability and collective response in soft solids [Phys. Rev. Materials 5, 055605 (2021)]

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In the original version of the paper, we wrote the incorrect formula for the stress tensor in Eq. (4) for jammed packings of deformable particles in two dimensions. The correct expression for the stress tensor when using periodic boundary conditions is [1]

$$\Sigma_{\xi\xi'} = -L^{-2} \sum_{\nu\neq\mu} \sum_{i=1}^{n_{\nu}} \sum_{j=1}^{n_{\nu}} f_{ij,\xi}^{\mu\nu} R_{ji,\xi'}^{\nu\mu} = -\epsilon_c L^{-2} \sum_{\nu\neq\mu} \sum_{i=1}^{n_{\mu}} \sum_{j=1}^{n_{\nu}} \left(1 - \frac{r_{ij}^{\mu\nu}}{\sigma_{ij}^{\mu\nu}} \right) \frac{r_{ij,\xi}^{\mu\nu} R_{ji,\xi'}^{\nu\mu}}{r_{ij}^{\mu\nu} \sigma_{ij}^{\mu\nu}}.$$
(1)

Here, $f_{ij,\xi}^{\mu\nu}$ is the ξ component of the force on vertex *i* belonging to particle μ from vertex *j* belonging to particle ν and $\xi = x, y$. $r_{ij,\xi}^{\mu\nu}$ is the ξ component of the vector pointing from vertex *j* belonging to particle ν to vertex *j* belonging to particle ν , and $R_{ji,\xi'}^{\nu\mu}$ is the ξ' component of the vector from the center of mass of particle μ to the contact point between vertices *i* and *j*. *L*, n_{μ} , and $\sigma_{ij}^{\mu\nu}$ indicate the edge length of the system, the number of vertices on particle μ , and the average diameter of vertices *i* and *j* on particles μ and ν (see Fig. 1). All relevant data in the paper used the correct expression in Eq. (1) to calculate the pressure and shear stress for jammed packings of deformable particles in two dimensions.



FIG. 1. Sketch of two contacting deformable particles that defines the quantities used in Eq. (1). Multiple vertices on particles μ and ν are in contact including vertex *i* on particle μ and vertex *j* on particle ν . $R_{ji}^{\nu\mu}$ ($R_{ij}^{\mu\nu}$) is the vector from the center of mass of cell μ (ν) to the contact point between vertices *i* and *j*.

^[1] S. Edwards and D. Grinev, Transmission of stress in granular materials as a problem of statistical mechanics, Physica A: Statis. Mech. Applic. **302**, 162 (2001).